

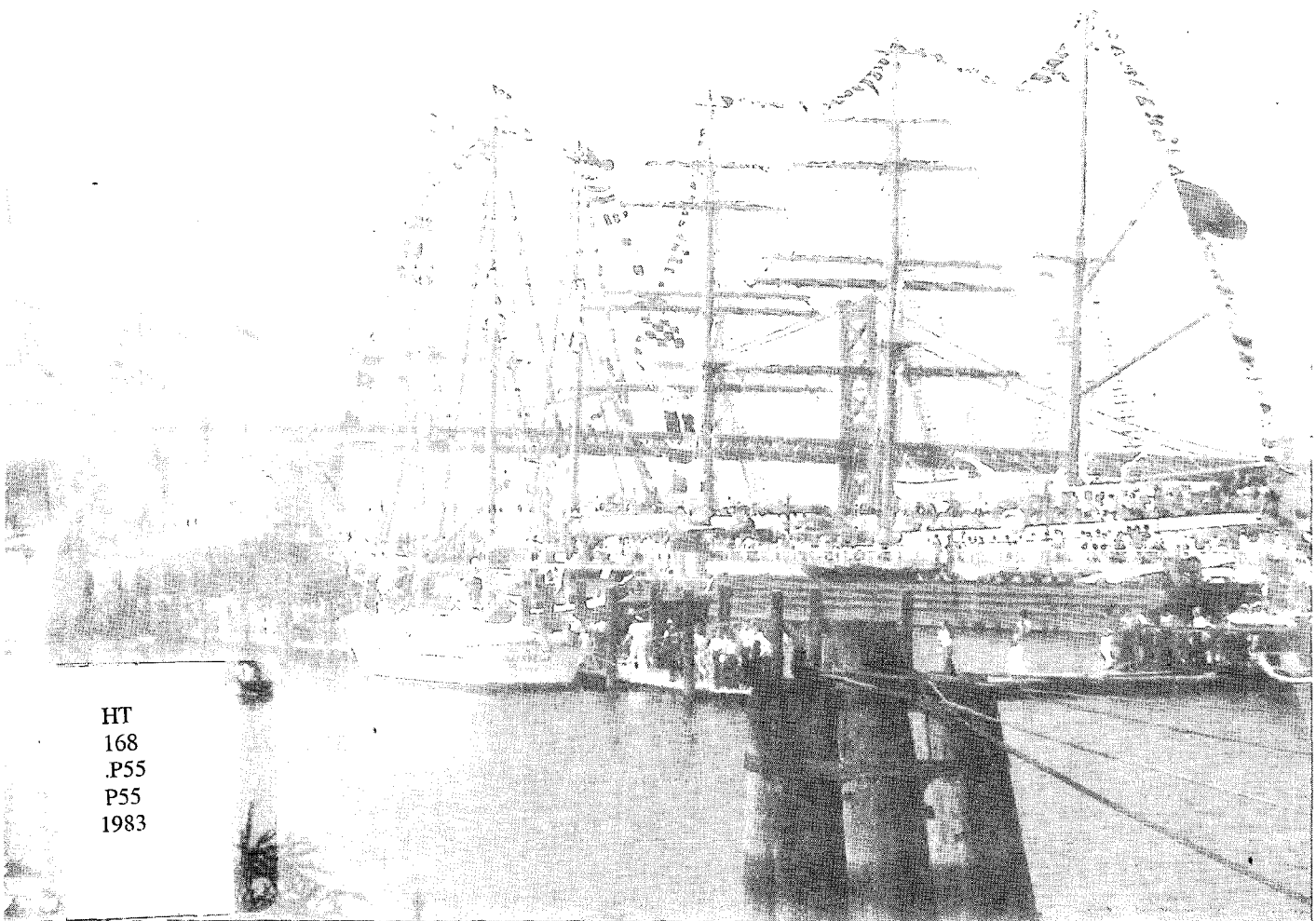
---

*Planning and Design Standards*

*Coastal Zone Management Program*

---

**Philadelphia**  
**RIVERWALK**



HT  
168  
.P55  
P55  
1983

---

Philadelphia RIVERWALK/  
Planning & Design Standards

March 1983

for  
Philadelphia City Planning Commission  
City Hall Annex  
Philadelphia, PA. 19107

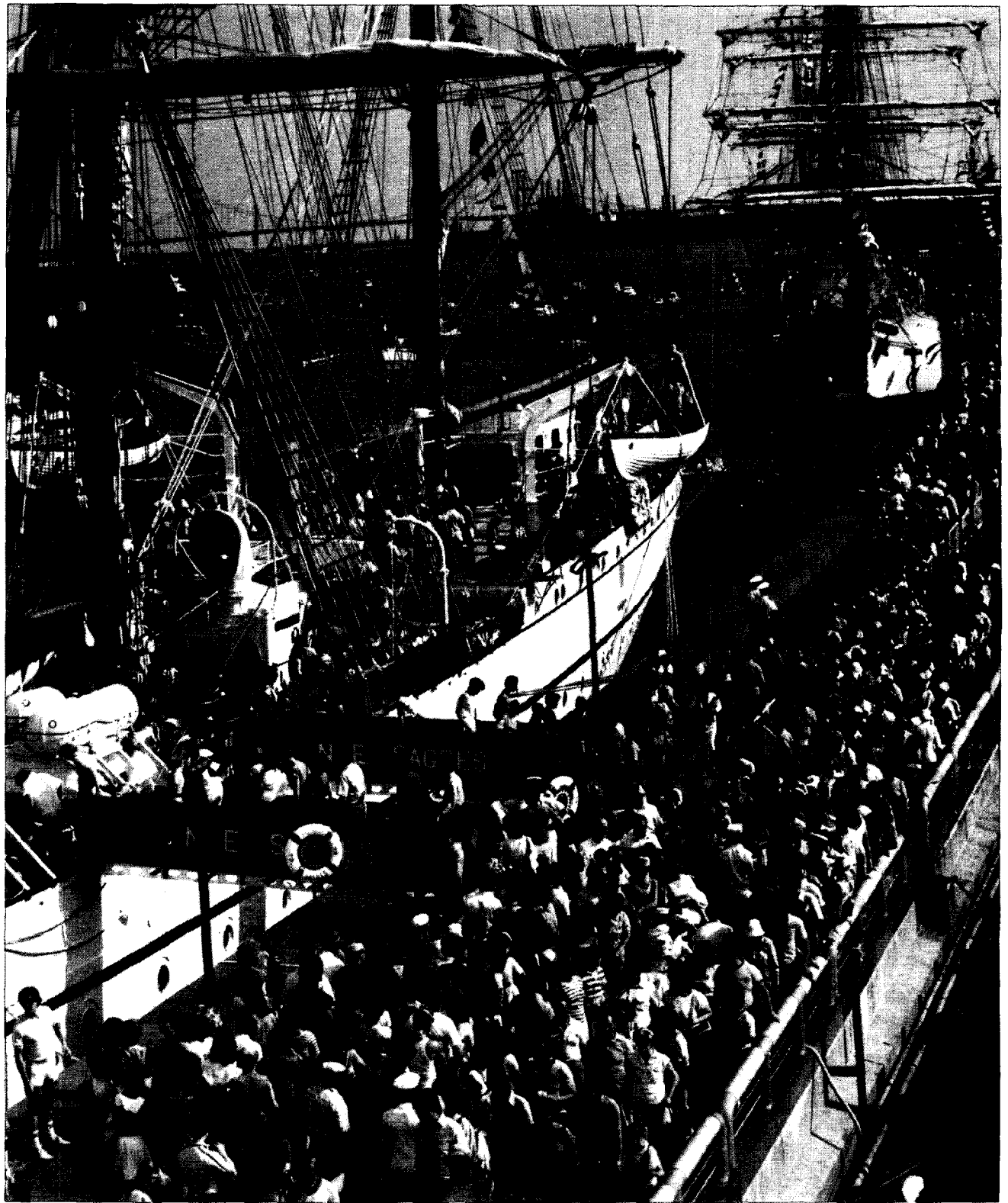
by  
DACP Associates, Philadelphia  
1316 Arch Street  
Philadelphia, PA 19107

---

At its meeting of March 17, 1983, the Philadelphia City Planning Commission adopted these RIVERWALK Planning and Design Standards for the route from Queen Street north to Penn Treaty Park.

This project was financed in part through a Coastal Zone Management Grant from the Pennsylvania Department of Environmental Resources with funds provided by the National Oceanic and Atmospheric Administration.

HT 68. P55 P55 1983  
# 6200112



---

## *Table of Contents*

### 1. INTRODUCTION AND SUMMARY

- A. Scope of the Study..... 1
- B. Summary Recommendations..... 1

### 2. DESIGN CONTEXT AND CONDITIONS

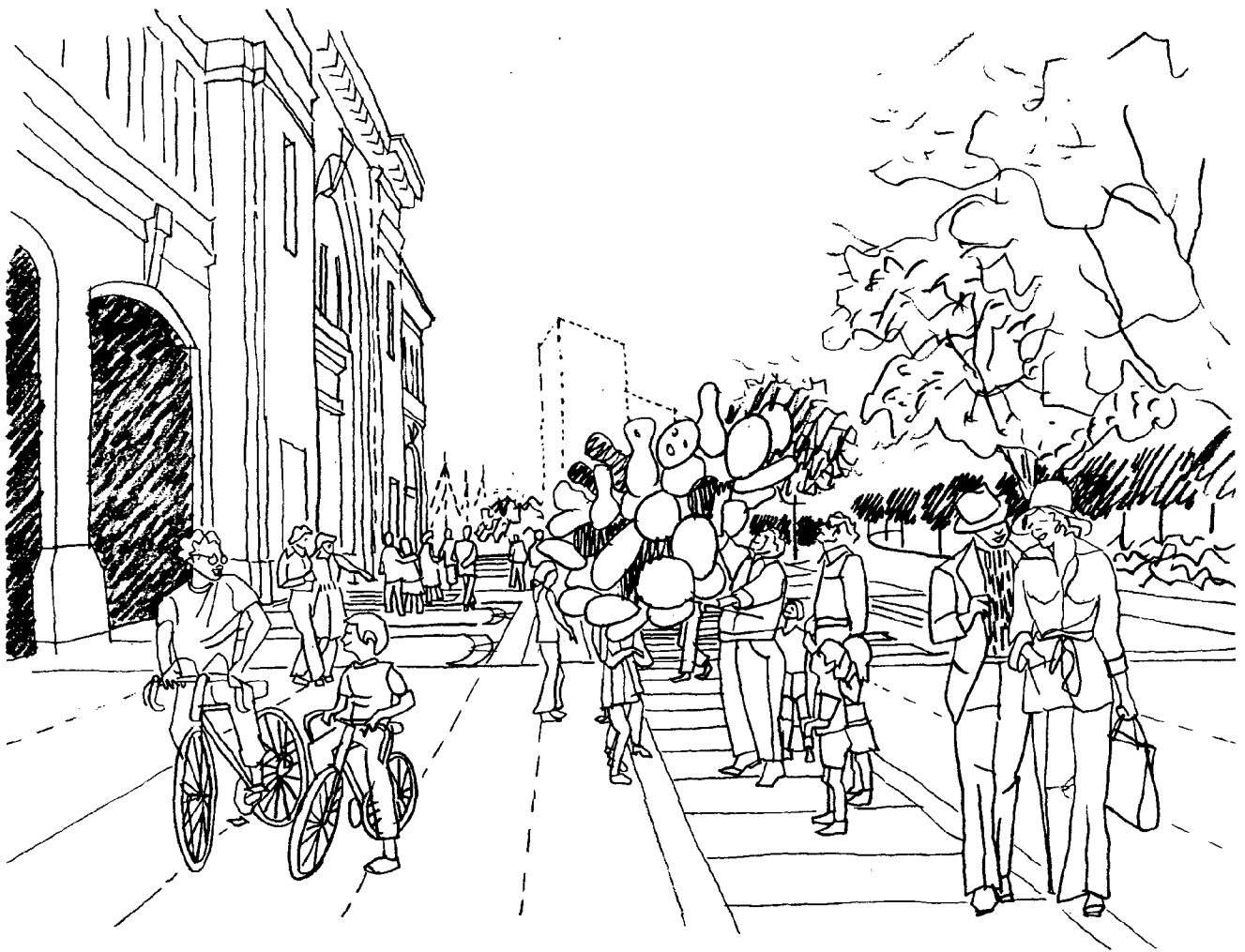
- A. Introduction..... 5
- B. RIVERWALK: Today and Tomorrow.. 9
- C. Existing Conditions.....11
- D. Planning and Design Issues.....23

### 3. THE RIVERWALK

- A. Goals and Objectives.....27
- B. Design Principle.....28
- C. The Design Concept.....31
- D. Design Features and Standards..35
- E. Prototypical Designs.....45

### 4. DESIGN GUIDELINES AND STANDARDS

- A. Introduction.....49
- B. The Guidelines By Segments.....49



# 1. Introduction and Summary

## A. Scope of the Study

In February 1982 the Philadelphia City Planning Commission adopted the Central Riverfront District Plan. This plan proposes to establish a RIVERWALK along the edge of the Delaware River from Washington Avenue to Penn Treaty Park.

The purpose of the design assignment being reported on here has been to take the initial ideas presented in the District Plan and to develop them into first, a more refined proposal and specific route alignment; and second, specific design standards.

As now planned, the RIVERWALK is a pedestrian right-of-way designed to connect the Penn Treaty Park on the north, to the area south of Washington Avenue, providing a continuous convenient, comfortable pedestrian system of almost three miles in length along Philadelphia's central waterfront area. As an integrative element of the Riverwalk design, perpendicular connections between the RIVERWALK and the adjacent residential neighborhoods have also been planned to improve overall pedestrian access to the Delaware River.

The principal products of this study have been the design of the walkway, the establishment of a right-of-way for pedestrians, the selection and positioning of street trees, paving materials, paving patterns, pedestrian lighting, benches and other street furnishing features along the RIVERWALK.

## B. Summary of Recommendations

A minimum fourteen and a half foot right-of-way for the RIVERWALK accompanied by strict paving and landscaping standards is recommended.

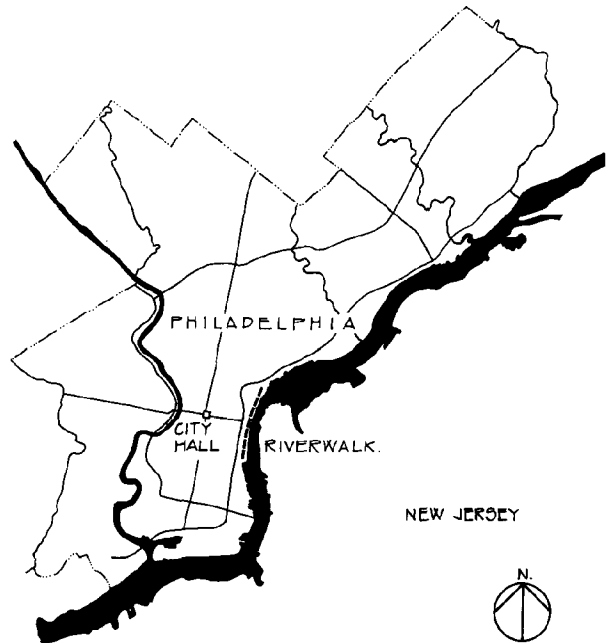


Figure 1: Location Map

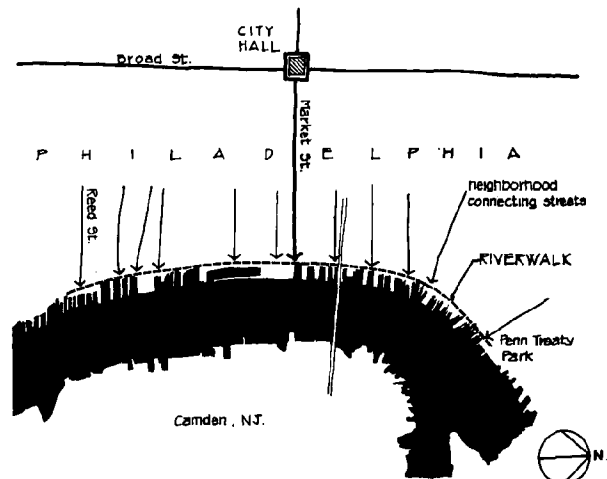


Figure 2: Conceptual Routing of Access to and along the River



Nevertheless, there still remains a considerable amount of commercial and industrial activities in use on the waterfront north of the Benjamin Franklin Bridge. Implementation of a complete RIVERWALK design through those areas still active with frequent, large and heavy equipment is not recommended at this time.

However, since there is considerable public and private interest in having a complete pedestrian route as soon as possible, it is recommended that at least new conventional sidewalks be constructed adjacent to existing industrial land uses along Delaware Avenue from approximately Spring Garden Street to the Penn Treaty Park. It should be understood that this solution is regarded as purely utilitarian, until new development in this area takes place. At that time, at least the minimum cross sectional dimensions, paving and landscaping of the RIVERWALK should be implemented.

In addition to the RIVERWALK, seven key neighborhood connections should be improved to aid access between the riverfront and its residential neighbors. Improvements vary by location and existing conditions, but should include at least signage, Delaware Avenue crosswalk designations, and a mixture of paving, landscaping and pedestrian lighting.



Figure 5: View of a portion of the RIVERWALK near the Benjamin Franklin Bridge.

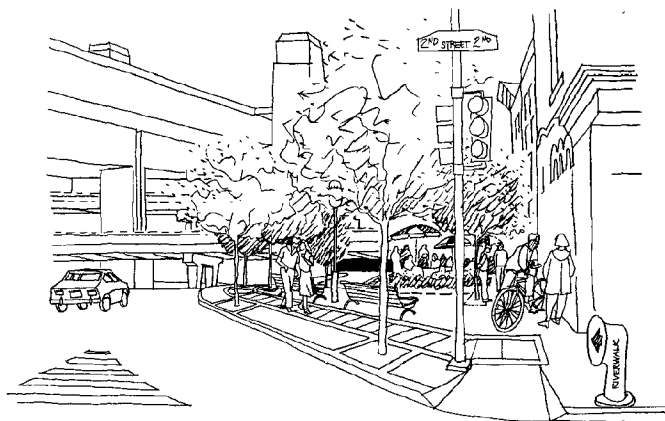


Figure 6: View of a portion of the Race Street neighborhood connection to RIVERWALK.





## 2. Design Context and Conditions

### A. Introduction

The Philadelphia City Planning Commission's Central Riverfront District Plan (CRDP) is one of a series of documents whose aim is overall waterfront improvement. The CRDP area is the Delaware Riverfront from Spring Garden Street on the north to Reed Street on the south. This area is the historic center of Philadelphia's waterfront commerce and industry. The new plan and its policy and recommendations has created significant opportunities for land use changes. The stated goal for the Central Riverfront District is to "create a place to live and work, to shop and dine, to be entertained and to have fun".

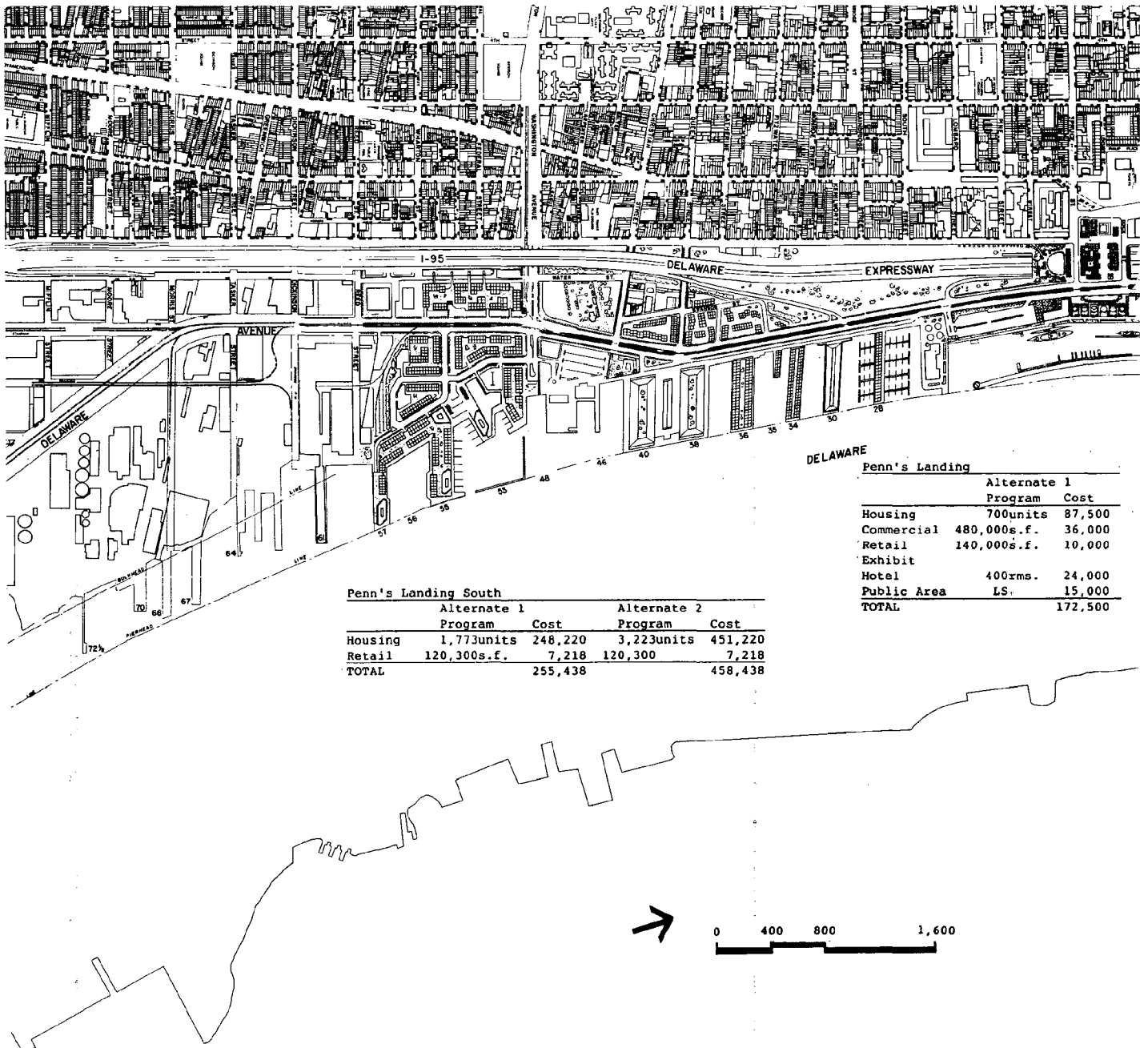
Numerous private development proposals have been received by the City. A major new restaurant and waterfront residential projects have already been proposed for Penn's Landing and the adjacent City owned piers.

The plan is based on a clear new attitude toward the function of this area within the context of Center City, the City as a whole and the larger Philadelphia region. That new attitude is summarized as follows:

- o The river is to be the focus of each development project.
- o Penn's Landing will be the centerpiece of this new riverfront redevelopment.
- o The existing finger piers will be developed to include a mix of uses: residential, retail, recreation and parking facilities.
- o All new development will be comparatively intense.
- o Access to the river will be an important feature of each development.

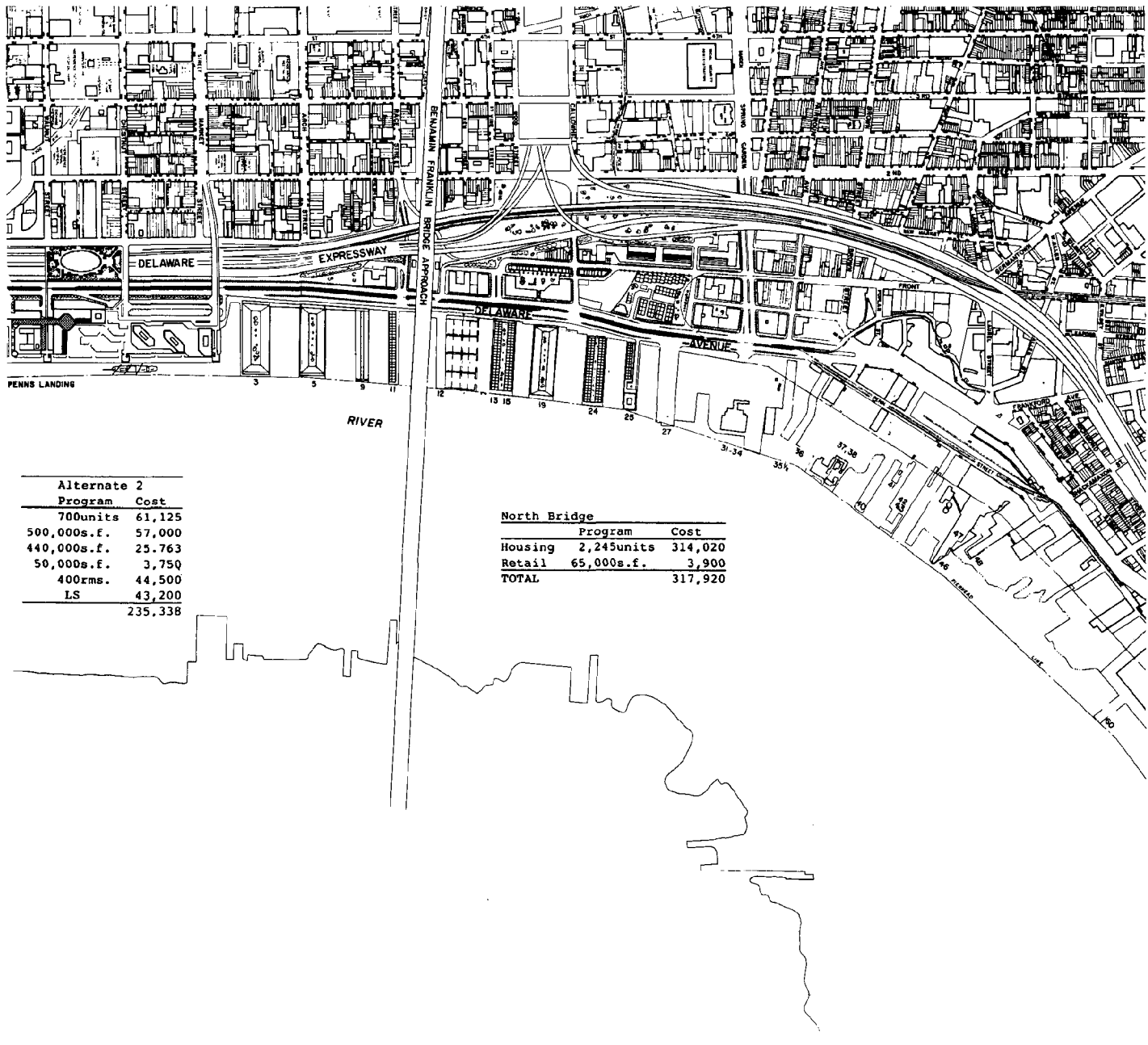
*Figure 7: Existing condition of a typical neighborhood street leading to the Delaware River.*





OCLC: 13616965      Rec stat: c  
 Entered: 19831028      Replaced: 19950403      Used: 19950130  
 \$ Type: a      Bib lvl: m      Source: d      Lang: eng  
 Repr:      Enc lvl: L      Conf pub: 0      Ctry: pau  
 Indx: 0      Mod rec:      Govt pub:      Cont:      Illus: abe  
 Desc: a      Int lvl:      Festschr: 0      Dates: 1983, %  
                  F/B: 0      Dat tp: s  
 \$ 1 040      PAU 'c PAU %  
 \$ 2 043      n-us-pa %  
 \$ 3 090      'b %  
 \$ 4 049      NCAM %  
 \$ 5 110 2      DACP Associates. %  
 \$ 6 245 10      Philadelphia riverwalk : 'b planning & design standards / 'c for  
 Philadelphia City Planning Commission by DACP Associates. %  
 \$ 7 260      Philadelphia, Pa : 'b The Commission, 'c [1983]. %  
 \$ 8 300      59 p. : 'b ill., maps, plans ; 'c 28 cm. %  
 \$ 9 500      "March 1983." %  
 \$ 10 500      "The Philadelphia City Planning Commission adopted these  
 RIVERWALK Planning and Design Standards for the route from Queen Street north  
 to Penn Treaty Park." %  
 \$ 11 500      "Coastal Zone Management Program"---Cover. %  
 \$ 12 650 0      Waterfronts 'z Pennsylvania 'z Philadelphia. %  
 \$ 13 650 0      City planning 'z Pennsylvania. %  
 \$ 14 651 0      Philadelphia (Pa.) 'x City planning. %  
 \$ 15 710 2      Philadelphia City Planning Commission. %  
 \$ 16 710 2      Coastal Zone Management Program (Pa.) %  
 \$ 17 740 01      Riverwalk. %

Figure 8: The Central District River-front Illustrative Plan.  
February 1982. Philadelphia City Planning Commission.



Alternate 2	
Program	Cost
700units	61,125
500,000s.f.	57,000
440,000s.f.	25,763
50,000s.f.	3,750
400rms.	44,500
LS	43,200
	235,338

North Bridge		
	Program	Cost
Housing	2,245units	314,020
Retail	65,000s.f.	3,900
TOTAL		317,920

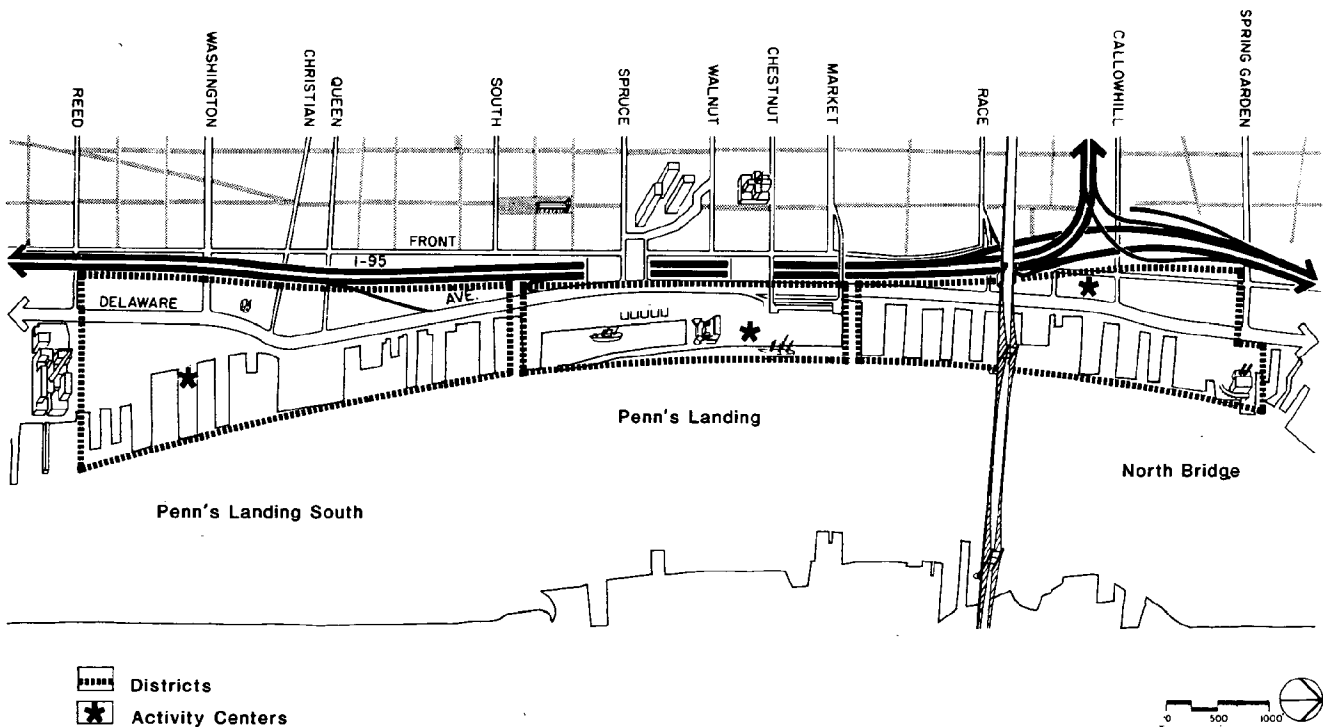


Figure 9: Activity Centers. The Central District Riverfront Plan. February 1982.  
The Philadelphia City Planning Commission.

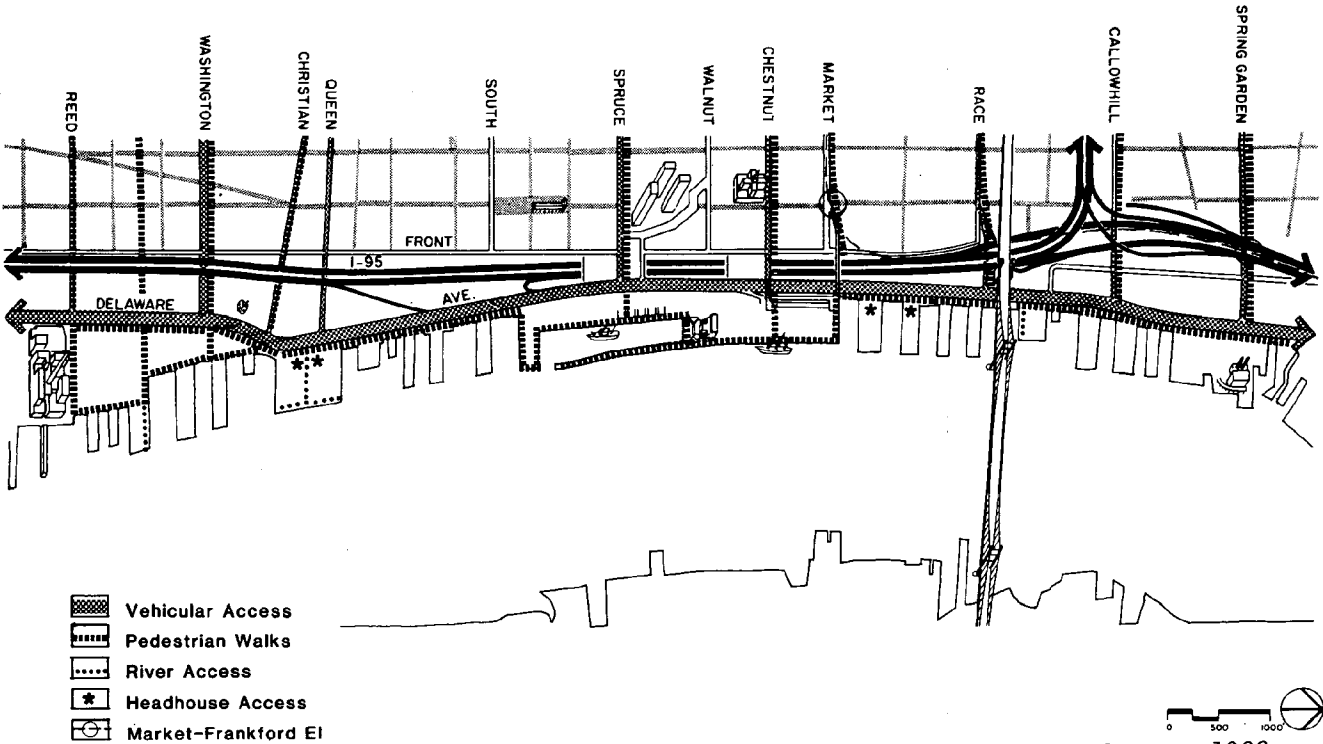


Figure 10: Connecting Elements: The Central District Riverfront Plan. February 1982.  
The Philadelphia City Planning Commission.

This new access will focus on water related recreational opportunities.

- o Pedestrian and vehicular linkages between the new riverfront development and the adjacent residential communities and Center City will be enhanced.
- o The potential for the Central Riverfront to become a unique attraction for local and distant visitors will be exploited.

This new attitude toward the future of this portion of the river has generated a series of concise planning goals that are listed below:

- o "Develop Penn's Landing as the focus of rebirth of the riverfront.
- o Create vital, attractive, new residential communities along the riverfront.
- o Provide opportunities for the public to enjoy the special amenities of the riverfront.
- o Improve access to and within the Central Riverfront District.
- o Develop urban design guidelines which promote the vitality and attractiveness of the new development."

Of these goals, the last three clearly provide direction for the design of the RIVERWALK.

The urban design principles of the CRDP further amplify the purpose and role of the RIVERWALK. The urban design principles are organized into three parts:

1. Activity Centers: Three land use districts and companion activity centers within the Central Riverfront District. (Figure 9)
2. Connecting Elements: Pedestrian, vehicular and public transportation access to and along the Central Riverfront District. (Figure 10)
3. Urban Design Features: Design features which establish the location of high and low rise buildings;

identify architecturally valuable building facades for preservation or improvement; highlight the pedestrian view corridors and/or panoramic views which should be preserved; and note the landscape buffers that should be created. (Figure 11)

The new attitude toward the riverfront, the planning and development goals that have been articulated, and the urban design principles that are incorporated into the City's Central Riverfront District Plan provide a perfect background for the development of pedestrian amenities that do not currently exist along the riverfront.

#### B. RIVERWALK: Today and Tomorrow

Today the initial components of the RIVERWALK are already in place as part of the existing Penn's Landing improvements. An esplanade was originally designed and built into Penn's Landing. This esplanade currently provides pedestrian access to the river's edge and circulation around the existing Penn's Landing boat basin. Unfortunately, there are no sidewalks or pedestrian rights-of-way along the rest of the Delaware River either north or south of Penn's Landing.

As part of overall transportation improvements, the State of Pennsylvania Department of Transportation has prepared preliminary plans for improvements to Delaware Avenue north and south of Penn's Landing. These plans focus on the need to improve the street and railroad bed, alignment, lane configuration and new street lighting. The edge of the river between the bulkhead and Delaware Avenue curbs has not been addressed as an improvement area.

Observation of current activities along Delaware Avenue and the Delaware River reveals that despite the lack of a

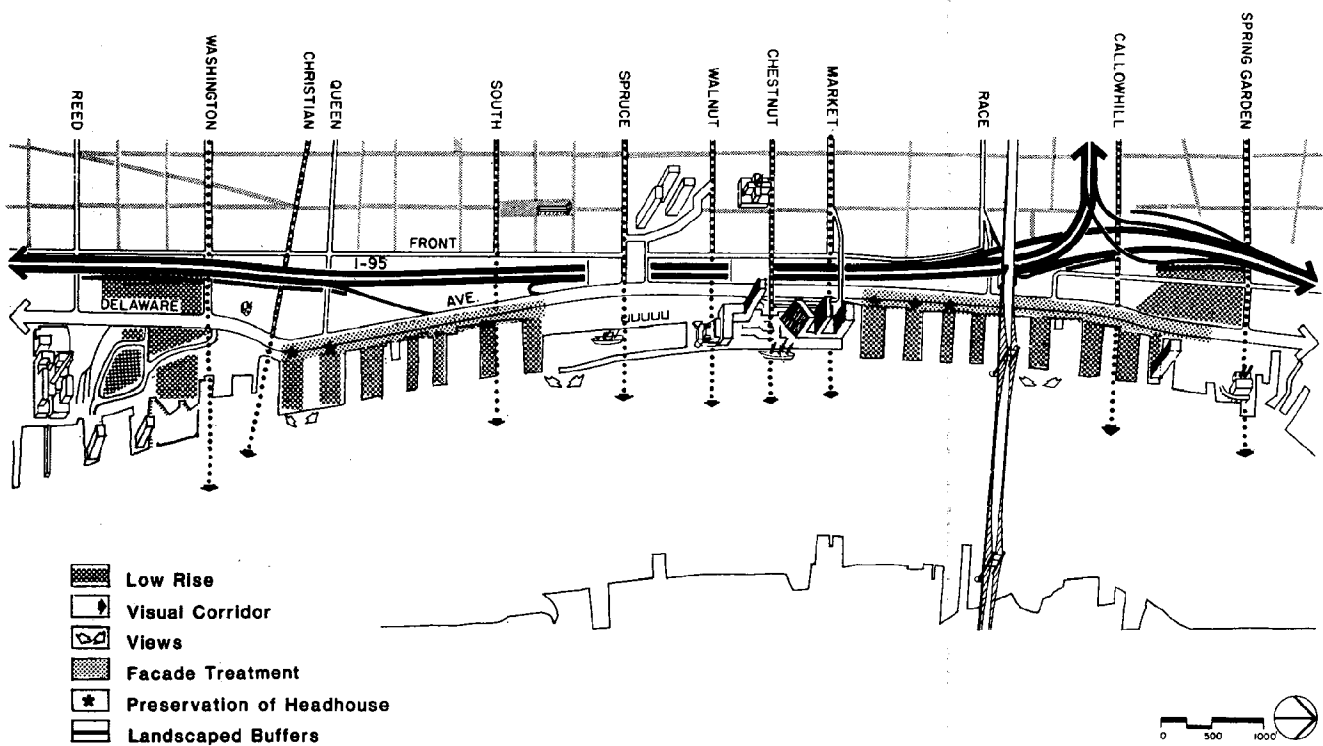


Figure 11: Urban Design Features. The Central District Riverfront Plan. February 1982.  
The Philadelphia City Planning Commission.



formal pedestrian route, a significant amount of daily recreation activity is already occurring there. These activities range from jogging and strolling to bicycling. During special events at Penn's Landing, like the Tall Ships or other cultural festivities, the route comes alive with pedestrians coming to and going from the events.

With the approval of Central Riverfront District Plan, the City's development policy position toward the Central Riverfront has been significantly refined, making clear that the Central Riverfront area will be developed for residential and commercial uses. The Plan proposes more than 5,000 new residential dwelling units, a hotel, one half million square feet of office space and almost as much space for retail, recreational and maritime activities. The need for a defined and well designed pedestrian facility to connect all these uses and activities becomes ever increasing and essential. The proposed RIVERWALK of tomorrow will tie all new riverfront development activities together and provide expanded recreational and cultural amenities for the varied population of Philadelphia and for visitors and tourists.

### C. Existing Conditions

#### 1. Vehicular Patterns (Figure 12)

The riverfront area is served by a variety of streets and highways. The most important is Delaware Avenue which runs parallel to the waterfront.

Delaware Avenue is a major traffic arterial. Historically, Delaware Avenue has always been an important industrial service street, handling through traffic, rail cars, vehicular parking and limited temporary surface storage areas. These activities have often required the complete width of area from bulkhead to opposite side

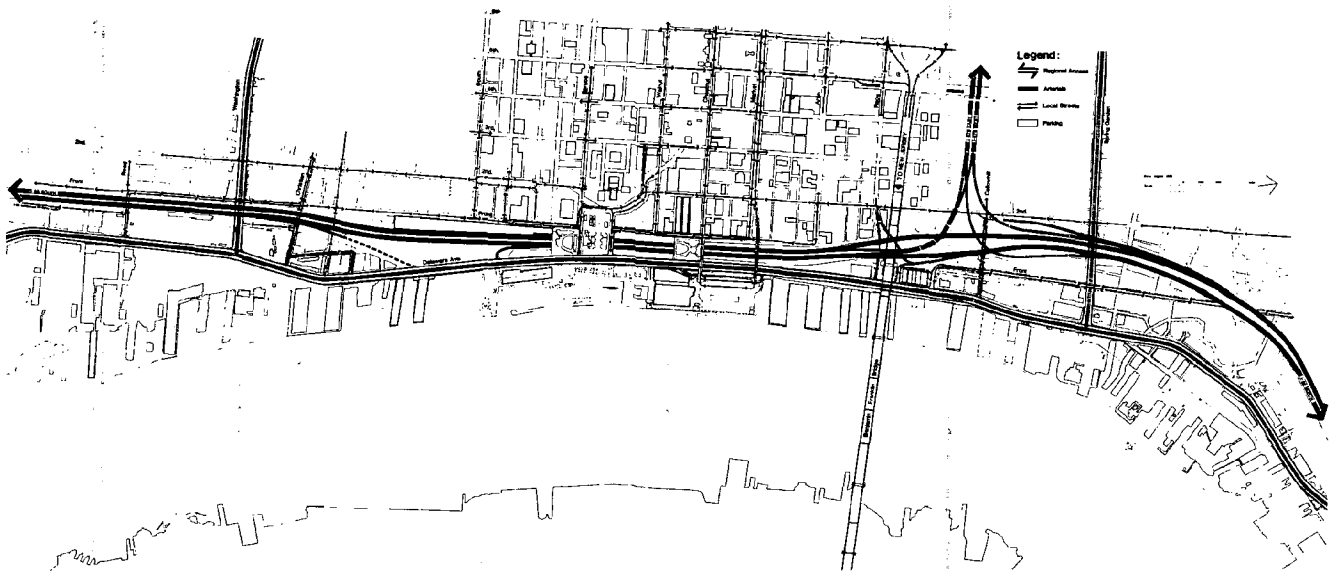
building fronts. In recent years, portions of Delaware Avenue have been improved. These improvements have basically been aimed at leveling the roadbed, simplifying the rail lines and their location, adding curbs, median barriers and street lighting. As a result of the Delaware Avenue improvements, a service zone between the waterside curb and the bulkhead or pier headhouse has been created.

The new Delaware Expressway (I-95) parallels Delaware Avenue along this central section of the riverfront. It is a limited access facility partially depressed and covered adjacent to Penn's Landing. North and south of Penn's Landing, the Delaware Expressway is elevated. Vehicular and/or pedestrian access routes go over the depressed section of the expressway and under it where it is elevated. Nevertheless, the expressway greatly limits the ease of local access to the riverfront in this central area.

The perpendicular streets which provide access to the central area riverfront are few. Market and Chestnut Streets create a one way elevated loop carried across both the Delaware Expressway and Delaware Avenue linked to Penn's Landing and Delaware Avenue with ramps. Spruce and Dock Streets form another one way loop. Spruce and Dock Streets have at-grade intersections with Delaware Avenue.

To the south of Penn's Landing, Queen Street, Christian Street and Washington Avenue make connections with Delaware Avenue. In the area between Queen and Spruce Streets, direct perpendicular access via existing streets is cut off by the Delaware Expressway. To the north, Race and Callowhill Streets provide modified vehicular access to Delaware Avenue. Spring Garden Street is the first major street north of Market Street, with a full two way intersection with Delaware Avenue.

Figure 12: Vehicular Patterns



These routes and others are illustrated in Figure 12. Modifications to the existing transportation routes continue in the planning and design stage. As they move into implementation, they can be expected to affect the vehicular patterns as currently mapped.

## 2. Public Transportation and Pedestrian Access

The Market-Frankford Elevated line has a stop at Second and Market Streets, two and a half blocks from Penn's Landing. There is also a subway stop at Spring Garden Street.

There are a number of east-west bus routes which utilize a series of one way east-west streets. Most of these routes end their east bound route on Front, Second or Third Streets. At least one route east bound on Market Street and west bound on Chestnut Street is planned to end its east bound route at Penn's Landing. However, the physical viaduct necessary for the loop to function has not yet been constructed, although construction is set for Spring 1983. In addition to the major east-west loops, there are a series of Center City loop routes which also provide service close to the riverfront: Cultural Loop, Mid-City Loop, Old City Loop and Penn's Loop. As riverfront redevelopment occurs, it is anticipated that the existing public transportation system will adapt to meet the new requirements.

There are no specially designated pedestrian connections between the riverfront and the adjacent residential neighborhoods. Pedestrian access is provided on conventional sidewalks or in the case of Society Hill, specially paved sidewalks built into the landscaped cover over the Delaware Expressway.

## 3. Redevelopment Project Status (Figure 13)

The recently adopted Central Riverfront District Plan cites a number of planned

changes to the land uses along the central section of the Delaware River. Generally, the proposed uses of the piers are residential and water-related tourist and recreational in character. Two new recreational marinas are proposed: One immediately north of the foot of the Benjamin Franklin Bridge; the other immediately south of Penn's Landing.

Delaware Avenue has been improved adjacent to Penn's Landing but sections of the arterial north and south remain to be rebuilt. The Delaware Expressway is largely completed in this area. A study of possible improvements to both on and off ramps in the vicinity of Penn's Landing is currently being conducted by the Pennsylvania Department of Transportation.

In addition, pedestrian improvements at South and Walnut Streets are possible. Both streets presently end at Front Street, but in an effort to improve pedestrian access to Penn's Landing it has been suggested that pedestrian bridges be extended across both the Delaware Expressway and Delaware Avenue to the waterfront.

Other conventional redevelopment activity continues to occur west of Front Street; new residential, hotels, restaurants, theaters, parking and restoration proposals continue to be pursued.

## 4. Views (Figures 14 & 15)

Ground level views of the waterfront from areas inland of the Delaware Expressway are limited by the expressway. Generally in the areas where the expressway is elevated on viaduct, views are confined to the visual windows framed by the underpassing streets and the expressway structure. In the vicinity of Front and South Streets, Front Street is high enough to provide some overlook of the expressway and overview to the river.

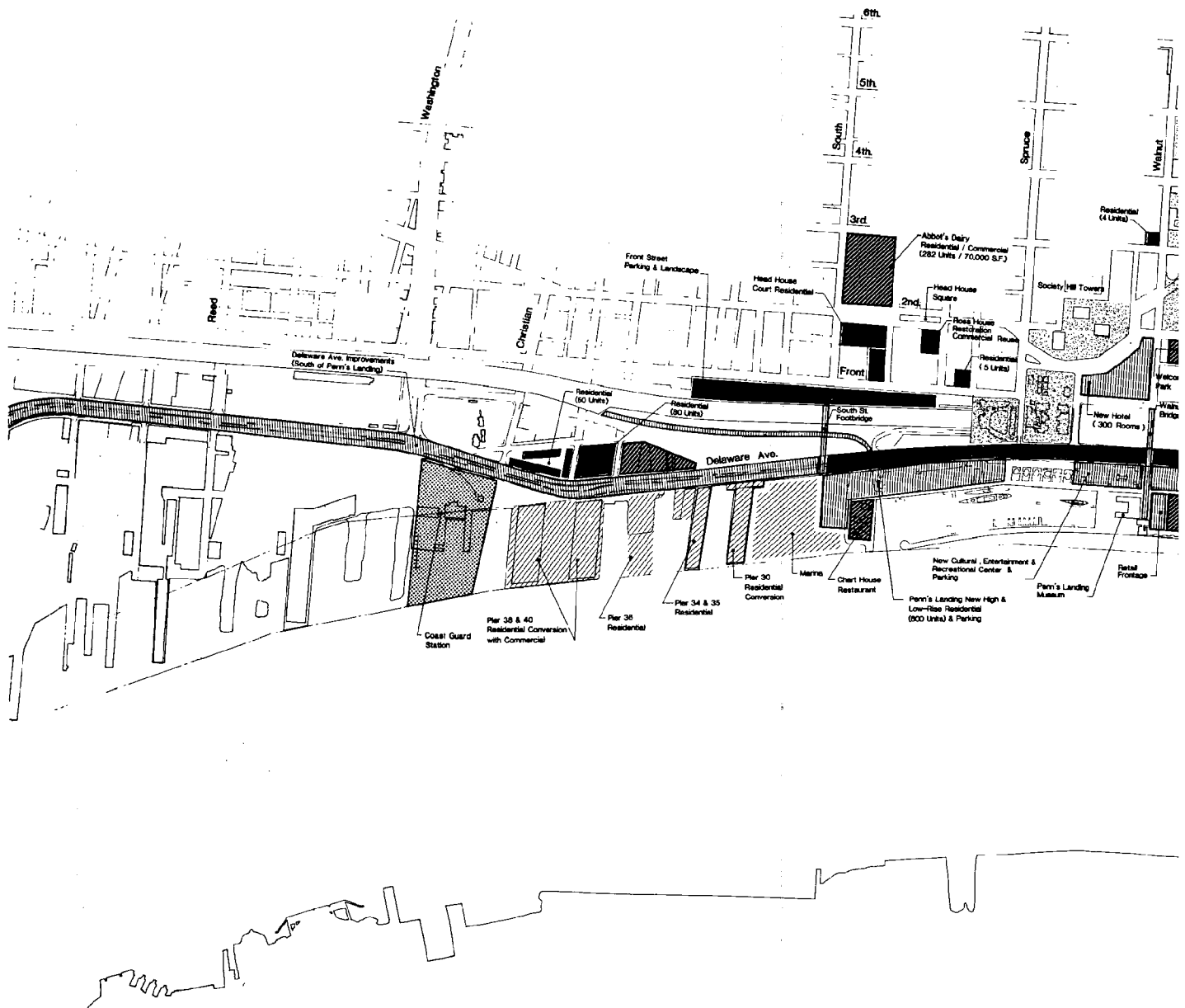


Figure 13: Project Status.

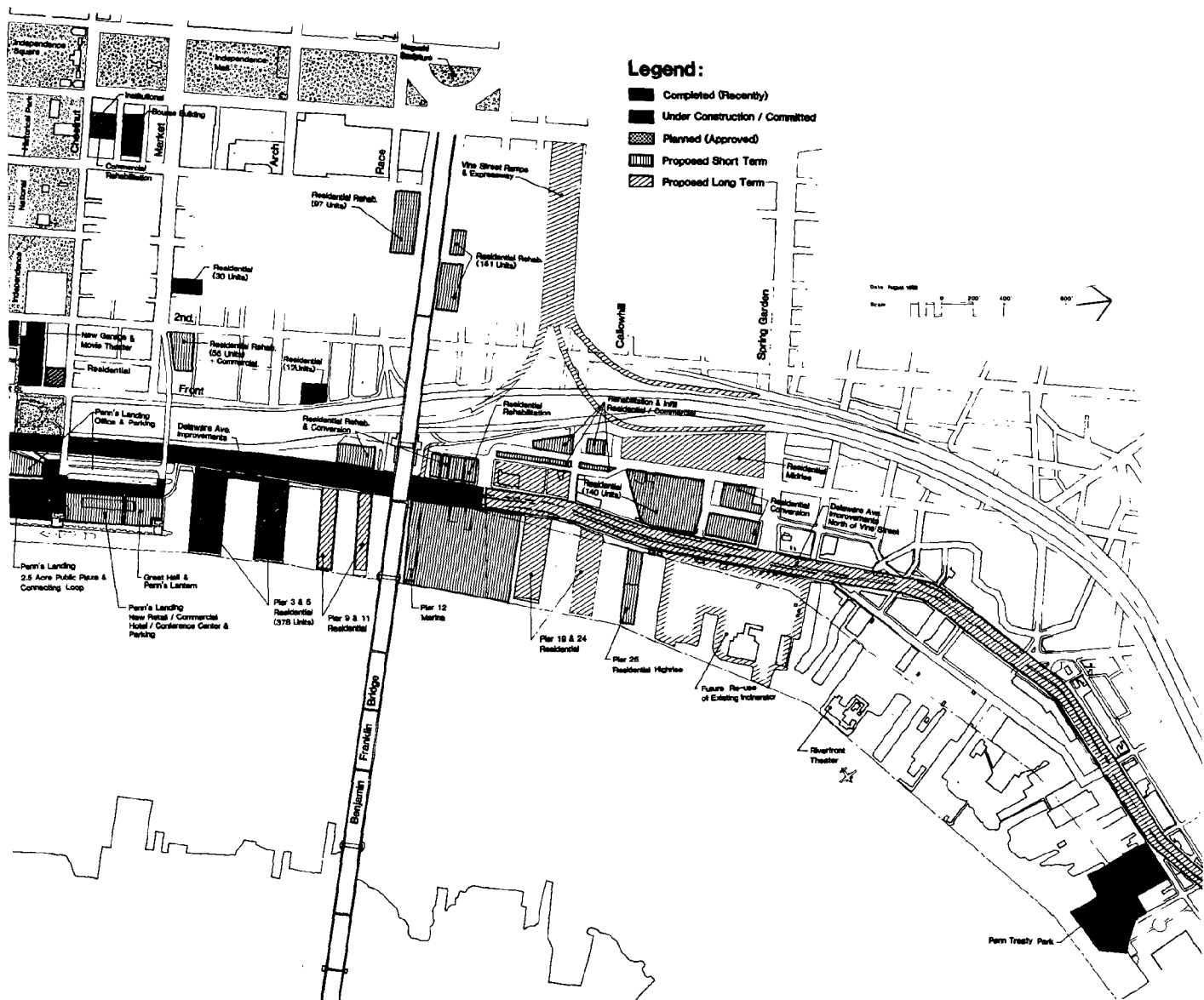
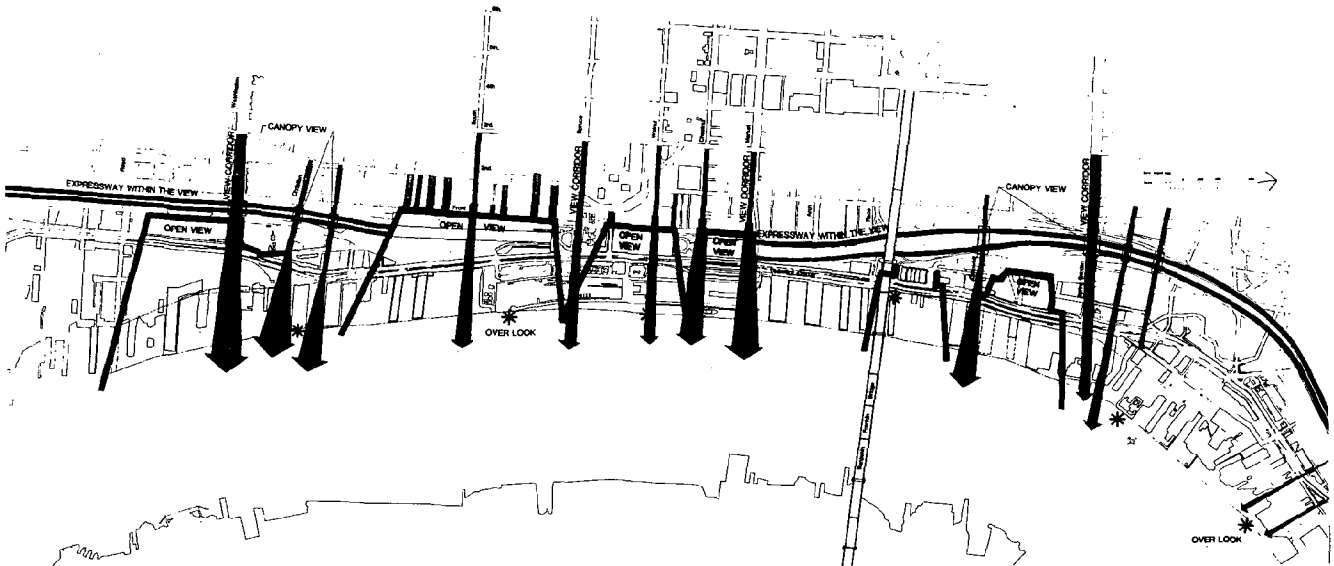


Figure 14: Typical View to the river  
framed by the I-95 Viaduct  
Structure.



Figure 15: Views to the Delaware River.



In the Society Hill area, ground level views from Front Street are possible between the covered sections of the expressway. The covers are higher than adjacent eye level and obstruct pedestrian views unless the observer is on top of the expressway cover. Front Street between Chestnut and Market Streets provides the pedestrian viewer with a panoramic view of Penn's Landing.

For areas north of Market Street, views to the river are limited or non-existent from areas west of the Expressway. Callowhill and Spring Garden Streets pass under the expressway and provide limited views of the waterfront.

#### 5. Constraints and Opportunities (Figure 16)

The constraints and opportunities are summaries of various factors. The Delaware Expressway and Delaware Avenue are major pedestrian, vehicular and visual barriers to the riverfront. These barriers exist for both the adjacent business, cultural and residential neighborhoods. Access to the area from the north and the south is extremely good because of Delaware Avenue.

On the riverfront several other factors must be addressed:

- frequency of vehicular trips to piers from Delaware Avenue.
- architecturally significant headhouses at many piers.
- pedestrian-vehicular conflicts at pedestrian crossings of Delaware Avenue.
- concerns for safety in the pedestrian underpasses of the Delaware Expressway.
- numerous sites along the river which are currently used informally and unofficially as overlooks of the water and boating/shipping activity.

#### 6. Conditions of Right-of-Way, by Segment (Figure 17)

The Delaware Avenue improvements, as illustrated in the most recent engineering drawings available from the Pennsylvania Department of Transportation depict an edge condition (between the bulkhead line and the water side curbline of Delaware Avenue) of variable dimensions. The area between the legal right-of-way line and the edge of the third moving lane on the east side of Delaware Avenue has been assumed to be the maximum potential right-of-way area available for the RIVERWALK. This area frequently includes the service road and parking; areas which have previously been incorporated into the initial Delaware Avenue improvement plans.

For the purpose of creating project/design areas of similar character, the RIVERWALK route has been broken into nine segments which are illustrated on Figure 19 and in Table 1.

Segment 1. Reed Street to Washington Avenue: Adjacent to the existing Conrail railyard at the foot of Washington Avenue, the existing right-of-way is 18 feet.

Segment 2a. Washington Avenue to Christian Street: Adjacent to the new Coast Guard Facility at the foot of Washington Avenue, the right-of-way varies from 32 to 132 feet.

Segment 2b. Christian Street to North Side of Pier 38 S: In front of Pier 38-40 South, the right-of-way varies from 140 feet to 30 feet providing sufficient space for the RIVERWALK as well as the potential for an outdoor plaza.

Segment 3a. Pier 38 S to Pier 30 S: The right-of-way is 30 feet with no service road.

Segment 3b. Pier 30 S to Penn's Landing:

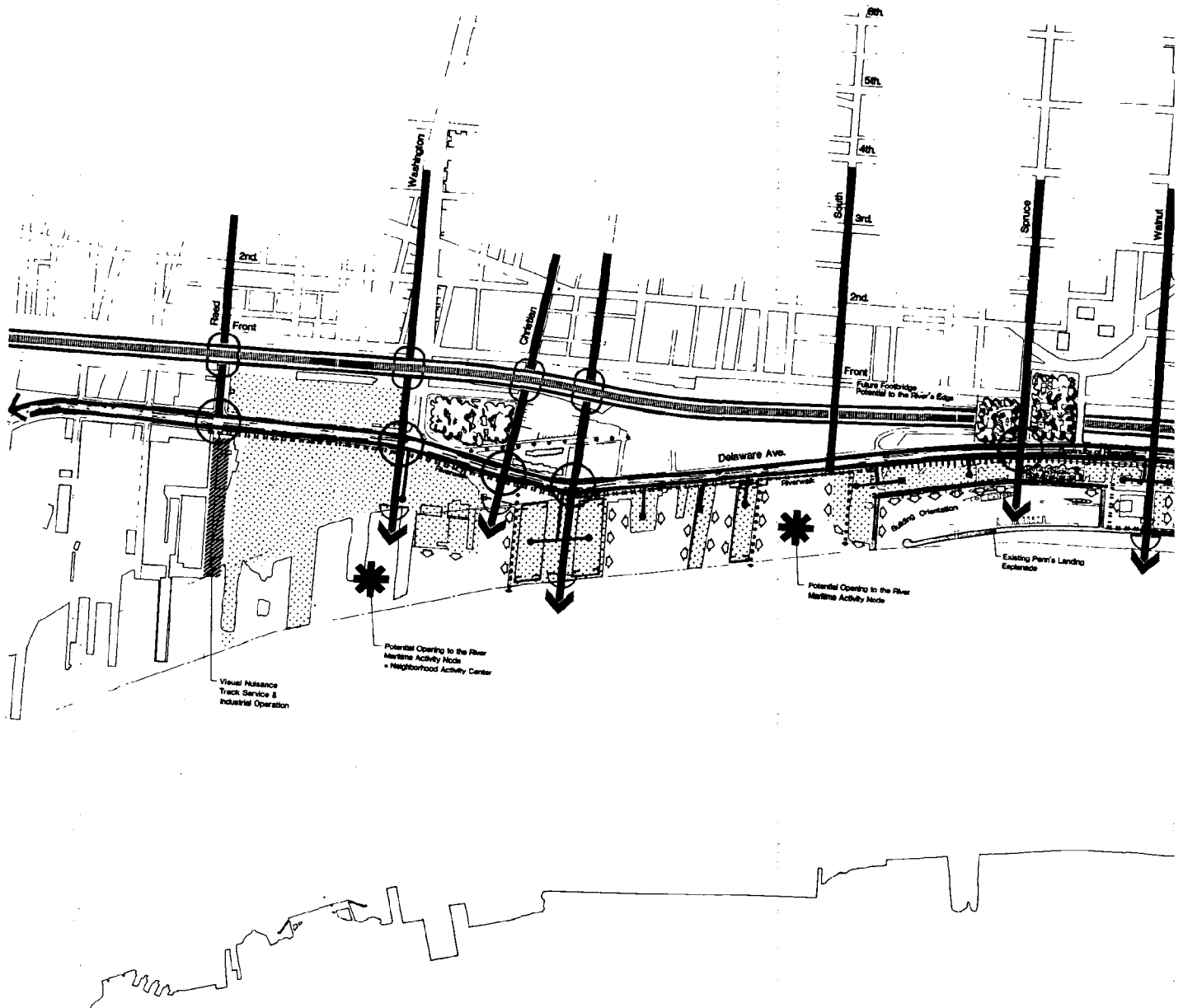




Figure 16: Constraints and Opportunities.

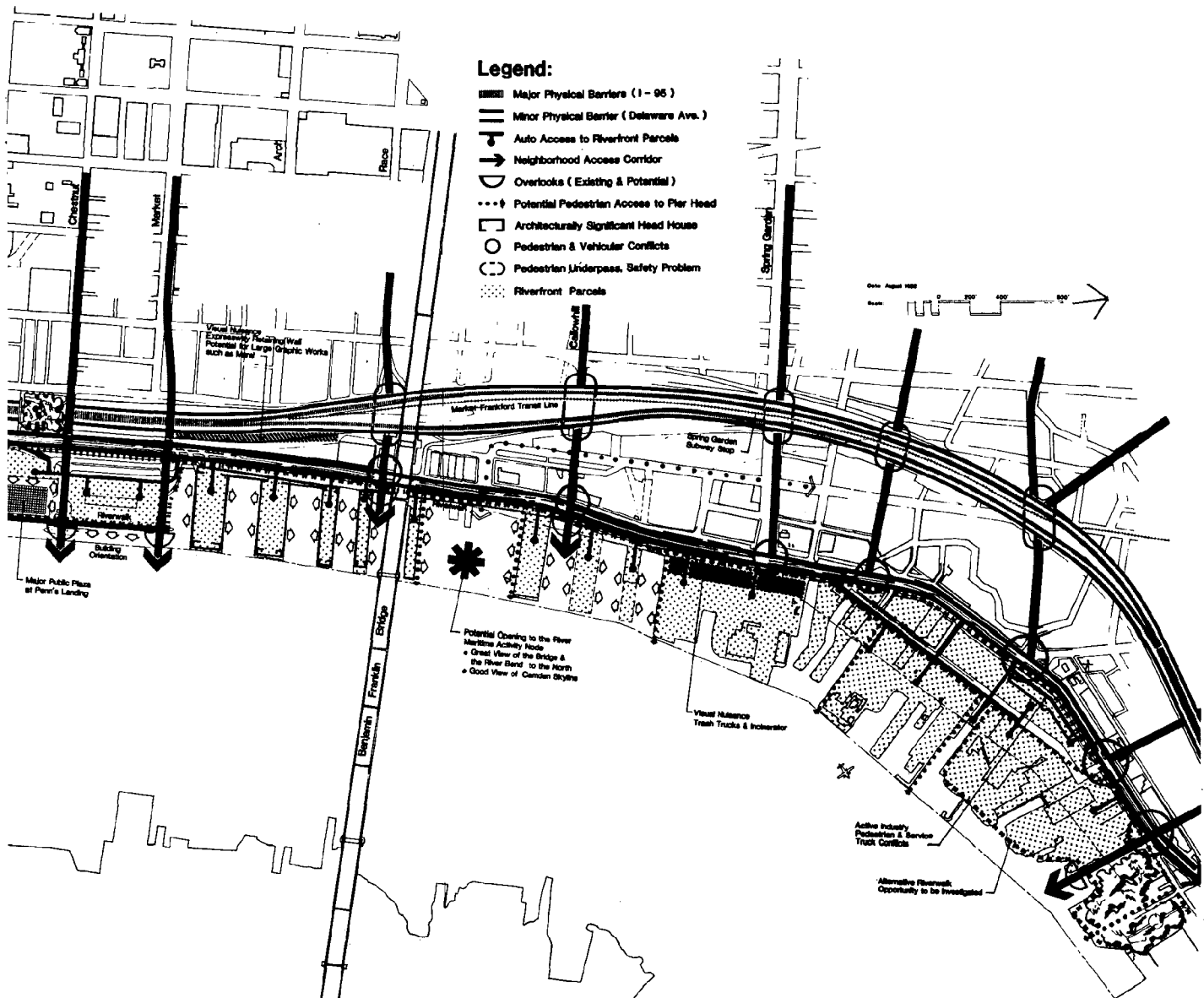
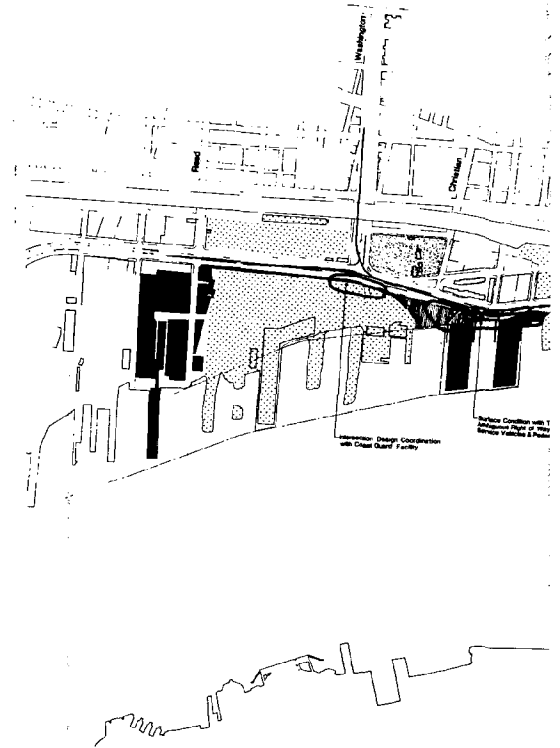
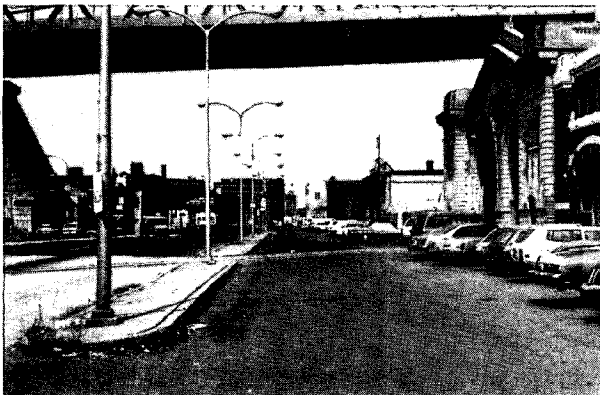


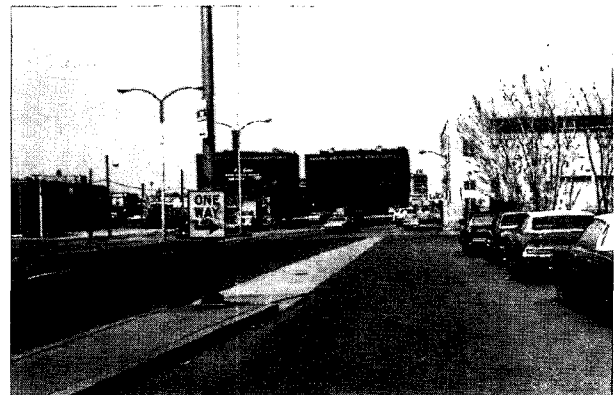
Figure 17: Project Conditions along  
the RIVERWALK right-of-way.

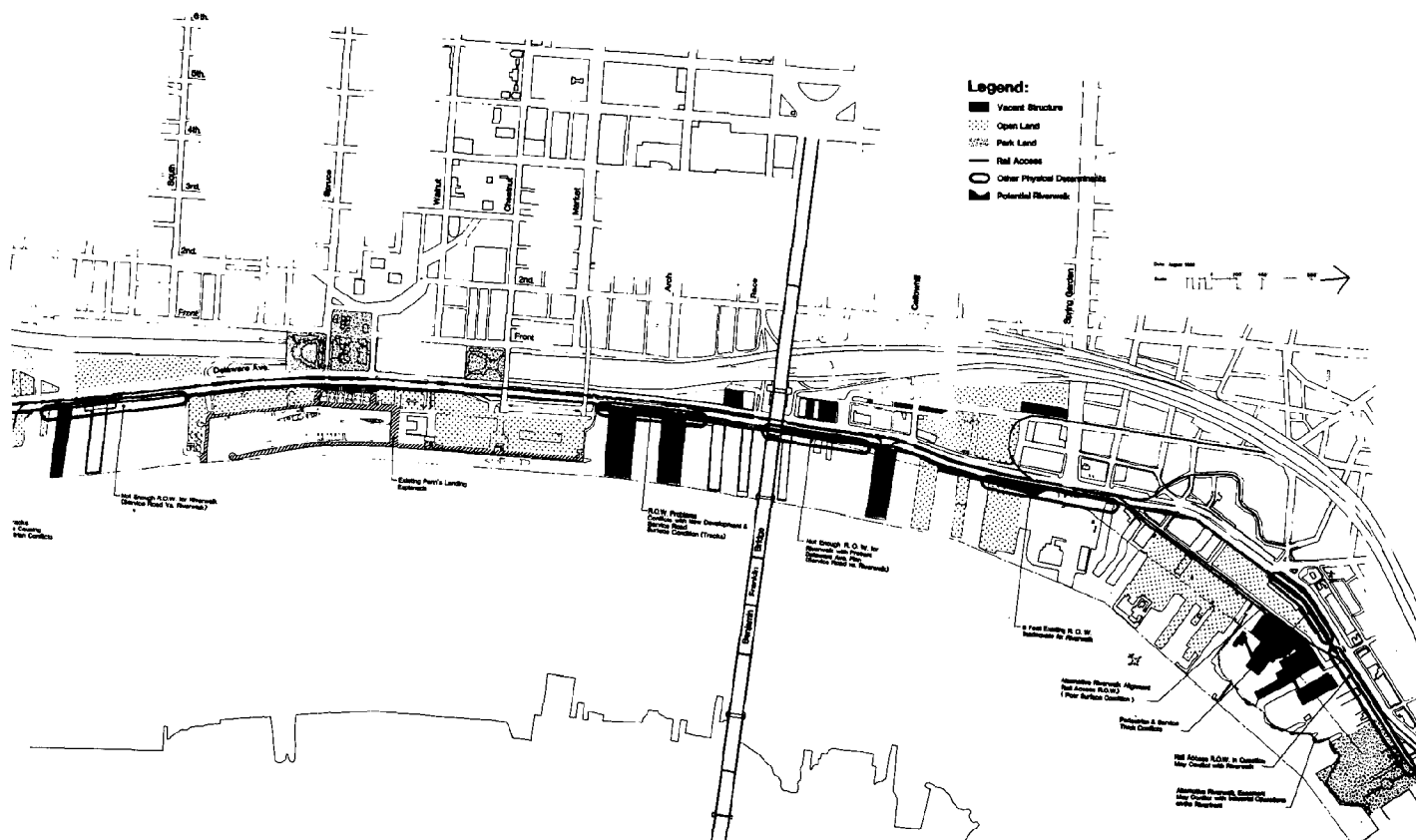


18a: The available right-of-way  
frequently includes both  
service road and parking.



18b: Numerous sites are used informally  
as overlooks of river activity.





18c: There are architecturally significant headhouses at many piers.

18d: Pedestrian access to the River is not clearly designated.

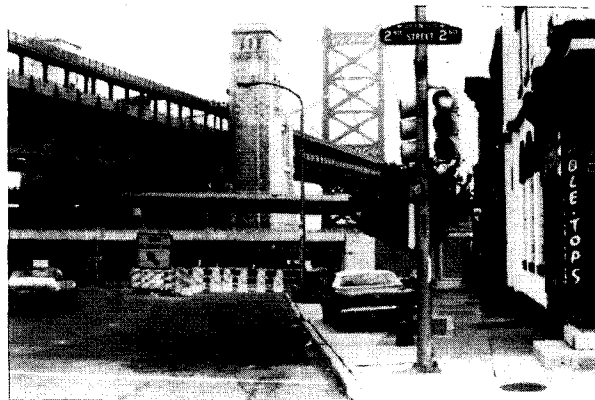


Table 1: Available Right-of-Way for Riverwalk.

Segment-by-Segment Dimensions				
Segment	Segment Location North to South	Existing Sidewalk (FT) <sup>(3)</sup> ROW	Service Road Proposed on Existing ROW <sup>(2)</sup>	Total Potential ROW <sup>(1)</sup> (FT)
1	Reed-Washington	18'	- 0 -	18'
2a	Wash.-Christian	32'-130'	- 0 -	32'-130'
2b	Christian-Catherine	30'-140'	- 0 -	30'-140'
3a	Catherine-Pier 30	30'	- 0 -	30'
3b	Pier 30-South	0	28'	28'
4	South-Pier 3N (Penn's Landing)	6'-28'	- 0 -	6'-28'
5	Pier 3N-Pier 11 N	4'	18'-46'	22'-50'
6	Pier 11 N-Callowhill	4'-13'	25'-35'	29'-43'
7	Callowhill-Pier 27N	8'	12'-23'	20'-23'
8	Pier 27N-Fairmount	18'-6'	- 0 -	18'-6'
9a	Fairmount-Columbia (on Delaware Ave.)	10'-20'	0-25'	10'-48'
9b	Penn Street	10'	- 0 -	10'

Footnotes:

- (1) Information comes from Delaware Avenue improvement plans prepared from the Pennsylvania Department of Transportation during the 1970's.
- (2) This (these) dimension(s) represent the maximum distance between the third moving lane on Delaware Avenue and the bulkhead line.
- (3) This (these) dimension(s) represents the right-of-way area reserved for a service road, with or without parking.
- (4) This (these) dimension(s) represent the area available for pedestrian improvements (RIVERWALK or other).

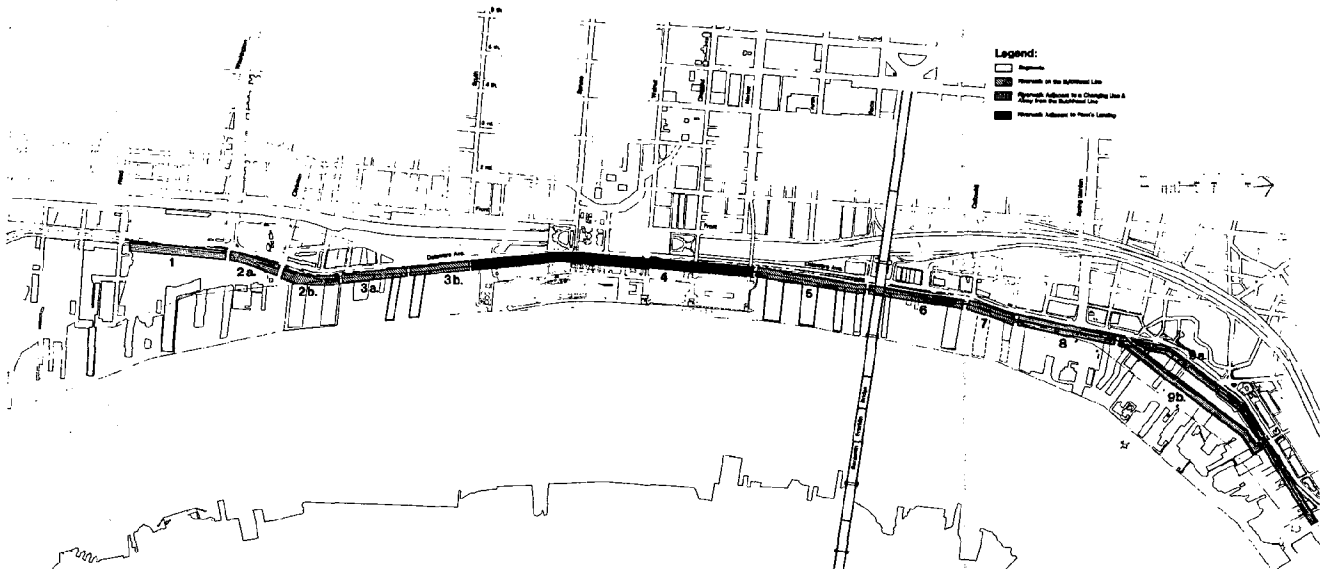


Figure 19: Project Segments

This segment has a right-of-way of 28 feet consisting of a service road and no sidewalk. Route continuity for RIVERWALK and the proposed service road are in conflict in this area because they would occupy the same area. The service lane has been deleted because of this conflict.

Segment 4. Penn's Landing: Beginning at South Street the right-of-way is 28 feet wide. From the edge of the boat basin north to beyond Market Street the width varies from 10 feet to 18 feet and 6 to 8 feet between Chestnut and Market Streets. The variable dimensions of the right-of-way may cause a modification or require a setback to accommodate a continuous treatment on this segment of the RIVERWALK. There are also some restrictions on the site, such as a 30 foot utility easement along the Delaware Avenue edge, that may keep the setback line 30 feet away from the curb.

Segment 5. North of Penn's Landing to Pier 11 North: The right-of-way varies from 20 to 50 feet and includes a service road. The space remaining for the RIVERWALK will vary from 0-33 feet. Some sections of the service road will require modification so as to accommodate RIVERWALK improvements.

Segment 6. Pier 11 N to Callowhill Street: The right-of-way varies from 6 to 43 feet and includes an existing service road. The space remaining for RIVERWALK will vary from 0-33 feet. Some sections of the service road will require modification so as to accommodate RIVERWALK improvements.

Segment 7. Callowhill Street to the South Side of Pier 27 N: The right-of-way varies from 20 to 35 feet which would be adequate for the RIVERWALK.

Segment 8. Pier 27 N to Fairmount Avenue (Along the City Incinerator Facility): The right-of-way is limited

to 6 feet which is inadequate and requires an additional setback of at least 6 additional feet for an interim sidewalk. The right-of-way varies from 18 to 6 feet.

Segment 9a and 9b. Fairmount Street to Penn Treaty Park: The 9a right-of-way varies from 10 - 38 feet including service road). The 9b route has a 10 foot right-of-way. Both routes are located away from the water's edge and are two alternatives for the connection of the RIVERWALK to Penn Treaty Park. General City policy toward this industrial area is discussed in the North Riverfront District Plan, since it is an area where industrial activities along the waterfront has declined. In general, Segment 9b has less restriction and conflict with other existing uses and has a service road as opposed to 9a. However, Segment 9a should be considered as a continuity of the RIVERWALK along Delaware Avenue. In the future, as redevelopment of the area occurs, further study should be made of possibilities of routing the RIVERWALK closer to the water's edge.

#### D. Planning and Design Issues

In addition to the existing conditions, a series of issues coalesced during the planning and design effort. Those issues created additional conditions which helped form the basis for the final design.

1. Quality standards for materials and details.
2. Competition for space along the River's edge.
3. Vehicular crossing of the RIVERWALK.
4. Pedestrian crossing of Delaware Avenue.
5. Access down to the fluctuating water level.

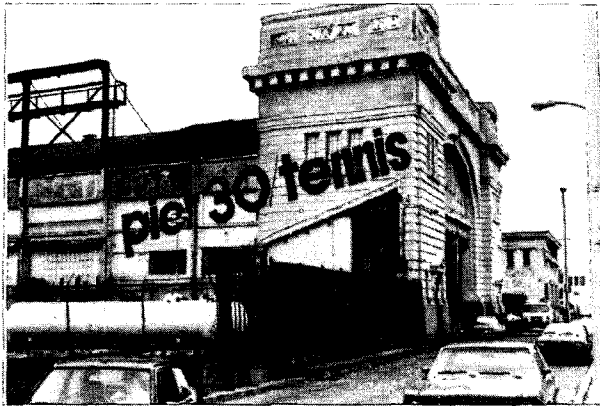


Figure 20: Competition for space along the riverfront will require sharing where space permits.



Figure 21: Frequent vehicular activity can be expected to some piers crossing the RIVERWALK.

### 1. Quality Standards for Materials and Details.

As a prime piece of the public environment, the RIVERWALK warrants prime quality building materials although materials of extravagant cost are not necessarily superior. Since the RIVERWALK should be expected to last for many years without anything more than normal maintenance, the least expensive building materials available may create future maintenance and appearance problems. Regardless of the material costs, the materials and detailing should be conventional and based on Philadelphia's past architectural traditions and imagery.

### 2. Competition for Space Along the river's Edge.

From the analysis of the conditions along the river's edge it is clear that there are some areas where a choice will have to be made between maintaining continuity of the RIVERWALK and retaining existing uses. Perhaps the clearest conflict occurs with the current use of much of the river's edge for parking. According to proposed improvements to Delaware Avenue, the remaining ground area between the curb and the bulkhead will occasionally be less than the fifteen foot minimum recommended for RIVERWALK. Fortunately, these instances are few and the constricted area has a relatively short length making the problem a minor one.

### 3. Vehicular Crossings of the RIVERWALK.

The RIVERWALK is conceived and designed as a pedestrian precinct. For the majority of its length, the river is on one side and Delaware Avenue is on the other. Occasionally, however, the RIVERWALK passes between Delaware Avenue and developable finger piers which jut out into the river. Vehicular crossings of the RIVERWALK will be required, but those crossings should be of the vehicles crossing the pedestrian precinct and not the other way around. The RIVERWALK paving and surface should

be continued through the crossing, although special detailing and materials will be required to withstand the additional weight and vehicular activity.

#### 4. Pedestrian Crossings of Delaware Avenue.

Only two of the pedestrian connections from inland neighborhoods to the RIVERWALK avoid at-grade crossing of Delaware Avenue: Market and Chestnut Streets. Because the majority of access is across Delaware Avenue, special attention needs to be given to the design and treatment of these crossings. Not all vehicular streets which connect Delaware Avenue with the inland street network are provided with a signalized intersection. Delaware Avenue itself is designed for 50 MPH traffic, a speed where short intervals between traffic signals is unsafe and frustrating to drivers. Since it is natural that people will use these traditional streets from inland neighborhoods to gain access to the RIVERWALK and to the riverfront activities, whether formal pedestrian crossings exist or not, a potential safety hazard remains to be solved.

In addition to the pedestrians crossing Delaware Avenue, there now is an antique trolley in operation in the center of Delaware Avenue. Its route is from the Ben Franklin Bridge on the north to Reed Street on the south. There are no formal pedestrian crossings from the river or inland streets to the trolley in the center of Delaware Avenue. The only reason it is currently functioning without severe conflict between vehicles and pedestrians is the fact that the trolley ridership is small and limited to weekends and special occasions when the vehicular traffic volumes on Delaware Avenue are low.

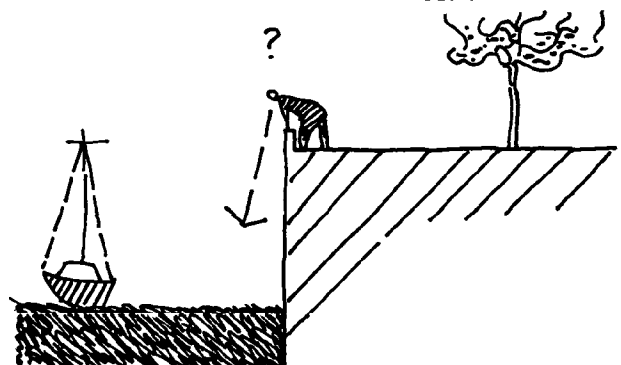
#### 5. Access Down to the Water.

There are no formal points of public

access directly down into the water in the Central Riverfront District. But as water quality continues to improve; as public attitudes towards water recreation in the Delaware River changes; and as residential and recreational developments along the riverfront are completed and occupied, the need and demand for access directly into the water will increase.

The ability of the RIVERWALK design to address each of these issues equally is limited. The public concern for long term quality has helped focus on the need to create some strict material specifications and design guidelines leaving specific construction details and designs to others and the future. The competition for space will require choice between competitors, a problem that at least does not exist for the full length of the RIVERWALK. The vehicular crossing of the RIVERWALK should not create unreasonable problems as long as it is the vehicles that are crossing the pedestrian turf. The pedestrian crossings of Delaware Avenue will require negotiations with the Pennsylvania Department of Transportation and the Philadelphia Department of Streets before these issues are resolved. Access to the water is solvable as an additive design feature; a physical solution that can easily be added to the RIVERWALK when the need and an implementation concept make it possible.

Figure 22: There are no existing formal points of access directly down into the water.







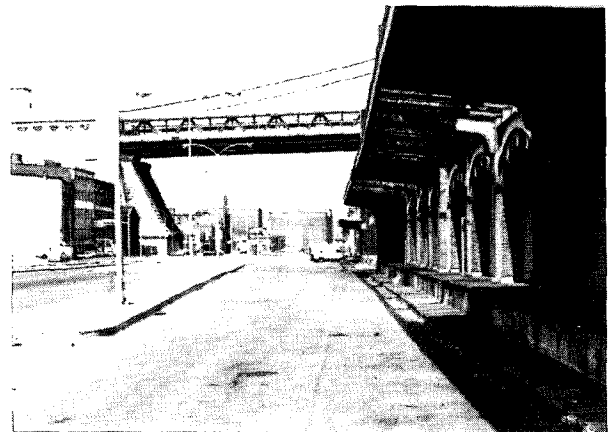
### 3. The Riverwalk

#### A. Goals and Objectives

The three general goals for the RIVERWALK are derived from the Central Riverfront District Plan. These goals and objectives are summarized below:

1. PROVIDE A FACILITY FOR THE PUBLIC TO USE WHICH WILL ALLOW THEM TO ENJOY THE SPECIAL AMENITIES OF THE RIVERFRONT.
  - o Encourage access to and activities at the water's edge.
  - o Create a river edge environment which has spaces that encourage use by people.
  - o Encourage pedestrian access to the pierheads.
  - o Maintain visual corridors from inland observation points to the river.
2. DEVELOP RIVERWALK AS A UNIFYING ELEMENT TO CONNECT ALL DEVELOPMENTS ALONG THE RIVERFRONT.
  - o Provide a unified and continuous tree-lined walkway on Delaware Avenue; encourage improvements to existing pedestrian links and encourage the provision of new links to adjacent neighborhoods.
  - o Develop a "minimum standard" for a continuous walkway, a standard which will provide the "unity" to the walkway and also leave enough flexibility in the design to allow for "creative diversity".
  - o Encourage selected landscaping and signage on the connecting pedestrian linkages.
  - o Provide for safe and convenient crossing of Delaware Avenue.
3. INCORPORATE WITHIN THE DESIGN OF RIVERWALK, OPPORTUNITIES FOR PERMANENT EXHIBITS OF RIVERFRONT HISTORY.
  - o Provide opportunities for a future

Figure 23: The existing environment is scaled for industrial and vehicular activities.



"Flow of History" exhibit to be made permanently part of the design.

- o Encourage the formation of waterfront history interest groups who could research and define exhibits and be advocates and fund raisers for construction of portions of the RIVERWALK.

#### B. Design Principles

There are eight principles which serve as the foundation for the RIVERWALK design:

1. Penn's Landing is the FOCUS.
2. Continuity of ROUTE.
3. Creation of PLACES.
4. Recording waterfront HISTORY.
5. The short and long VIEWS.
6. Human based SCALE.
7. High quality MINIMUM STANDARDS.
8. Creating and reinforcing the desired PERCEPTIONS.

Figure 24: Penn's Landing is the FOCUS.

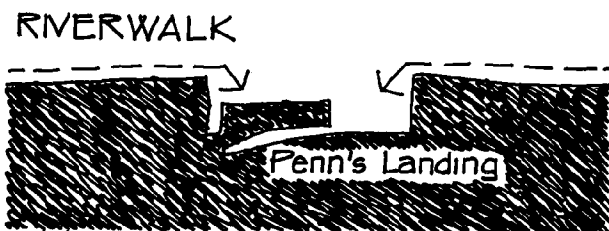
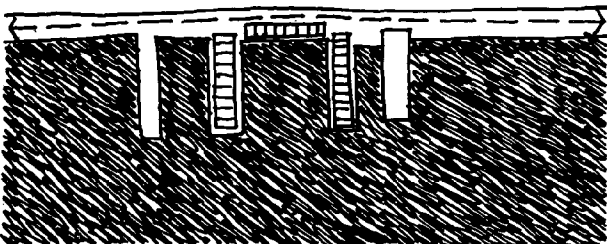


Figure 25: Maintain a continuous ROUTE.



1. Penn's Landing is the FOCUS:  
The Central Riverfront District Plan identifies Penn's Landing as the focus of popular interest in Philadelphia's waterfront. The role of the RIVERWALK is in orienting pedestrian connections to Penn's Landing. As mentioned earlier, pedestrian access to the river's edge and around the boat basin has already been built into Penn's Landing. The RIVERWALK ties into these features of Penn's Landing.

2. Continuity of ROUTE:  
The existing site conditions along the river's edge vary greatly: the width of useable area, the condition of Delaware Avenue, vendors at waterside, casual parking, pier headhouse entrances and adjacent vacant property are all local variables. In order for the RIVERWALK to provide a continuous route of pavement and furnishings, the RIVERWALK must displace and replace certain current activities that occupy the only available rights-of-way. The user will

be able to follow a clear continuous path along the river's edge.

### 3. Creation of PLACES:

Along the route of the RIVERWALK there are numerous opportunities to create stopping points and small areas for relaxation and lingering; intermediate points of destination. Areas in front of the pier headhouses are perfect for the creation of "places" but there are other opportunities along the route to enrich the path; small but important places. Variations in landscaping, furnishings, lighting and organization of the RIVERWALK have been designed to encourage the normal claiming and use of these places by people while preserving the rights of the owners and renters.

### 4. Recording Waterfront HISTORY

This principle represents more of an opportunity for future delineation than a description of a feature of the current design. Because of the historical uniqueness of the Central Riverfront District and because of the current plans to alter the future course of its role in the City, the RIVERWALK facility has both an opportunity and an obligation to also function as a continuous outdoor museum. Along the RIVERWALK, and built into the plazas and esplanades, could be historic plaques, sculptural exhibits and markers which provide a permanent record of the people, the organizations, the sites and events which, throughout the history of the waterfront, have made Philadelphia the great city that it is.

This RIVERWALK "flow of history" has obvious importance to the ultimate design program of the various elements which comprise the RIVERWALK. The complete RIVERWALK experience should go beyond leisure recreation; it should offer opportunities for learning, cultural enrichment and connecting people, places, events in time.

Figure 26: Create PLACES along the Route.

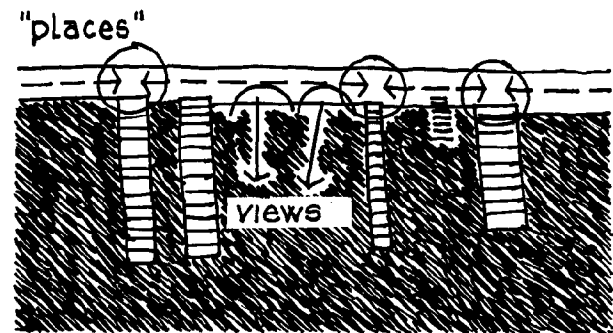
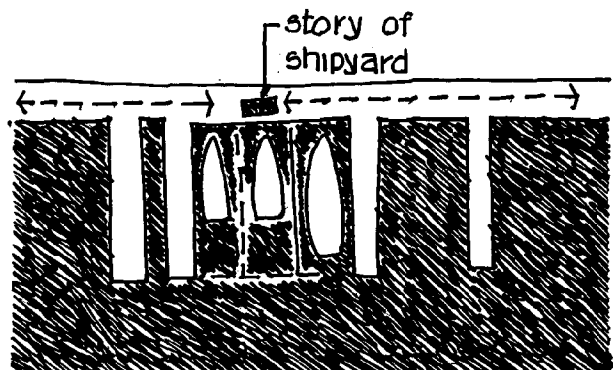


Figure 27: Integrate HISTORIC elements into the design.



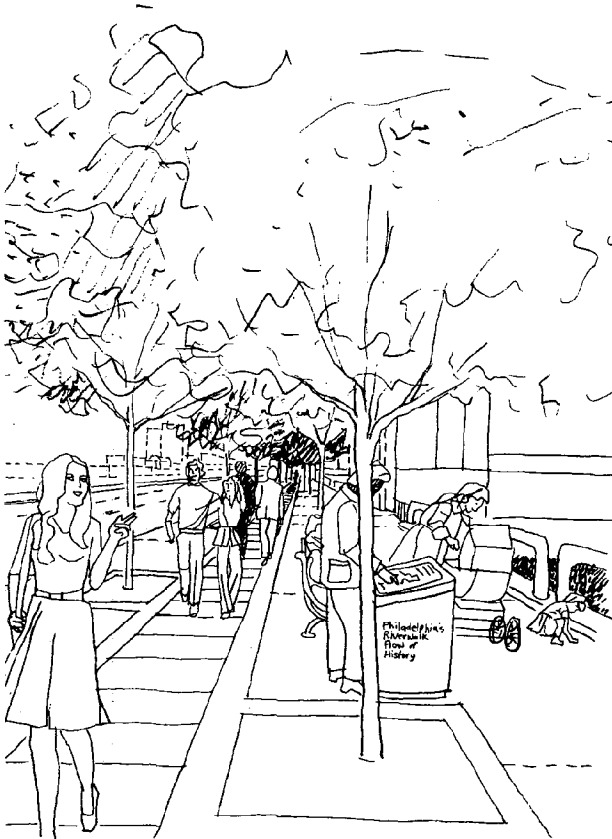


Figure 28: Typical pedestrian view.

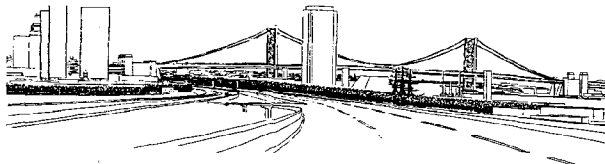


Figure 29: Typical distant view.

### 5. The Short and Long VIEWS

Two generalized conditions of visual dimension exist along the route of RIVERWALK; the short and the long views. The short view occurs at the pier headhouses where the immediate space is framed by the pier headhouses. Some of these headhouses have architectural merit and deserve to be highlighted. The landscaping material used in front of these headhouses deserves to be more transparent than does the plant material which lines the rest of the RIVERWALK. The ground plane here also has greater potential for enrichment of paving material and detail to respond to historic, architectural and/or neighborhood influences.

Those areas between piers should be designed to take advantage of the long view: the view of the river, the shipping and recreational boating activity. The design of the furnishings and landscape material should promote clear long views from the RIVERWALK and Delaware Avenue to the river.

### 6. Human Based SCALE

Even though the water and waterbased activities are what is generating the need for the RIVERWALK, the users are people. Part of the responsibility of the RIVERWALK is to create an environment that is safe, convenient and comfortable. It must have a human scale to all its features. Those features should be numerous but exclude the unnecessary. Where the riverfront has previously been scaled to the ships, ocean liners and tractor trailers, the new scale must be for the pedestrian. Steps, ramps, benches, planters with seats, overlooks, railings, signage, landscaping, artwork, paving and symbols must be directed toward the pedestrian.

### 7. High Quality MINIMUM STANDARDS

A minimum cross-section of pavement, landscaping, paving, material selection/specification and detailing is recommended. This minimum standard

responds to the other principles of maintaining route continuity, contributing to the creation of places, responding to the view conditions, and is based on a human scale.

#### 8. Creating and Reinforcing the Desired PERCEPTIONS

Three positions of perceptions have been addressed in a manner that is consistent and reinforces the design intentions. Those three positions are: 1) the user, 2) the drivers-by and 3) the distant viewer. The users are expected to be able to look ahead and clearly determine where the walk is leading them by evidence of a clear path which is continuous, paved with a consistent material, shaded by trees and lighted by fixtures in a uniform manner.

The drivers-by, as they move rapidly along Delaware Avenue, must be able to clearly distinguish the vehicular from the pedestrian environment by the clear definition of edges. The edges should be formed by the vertical pattern of trees and light fixtures, supplemented by curbing, bollards and paving materials. The continuity of the environment should be expressed by the continuous line of street trees, light fixtures and the connecting of places along the route.

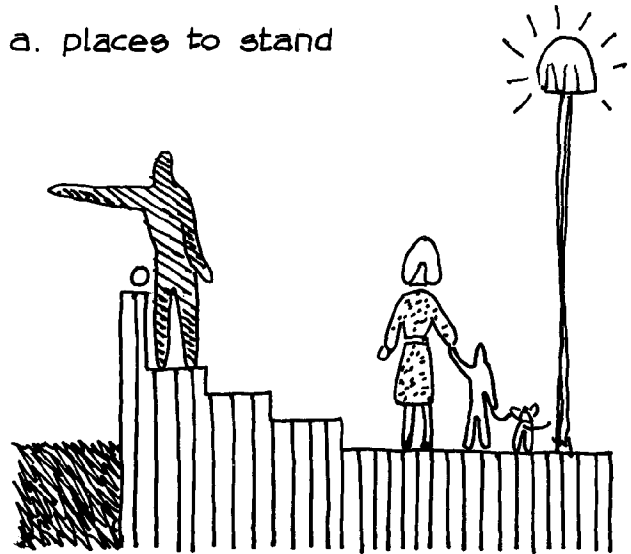
The distant viewer should see the larger system and environment which will make up the waterfront. The distant viewer should also clearly perceive the environmental unity that the RIVERWALK is to provide to the riverfront activities. This perception should be reinforced by the continuity of relatively uniform landscaping along the entire route.

#### C. The Design Concept

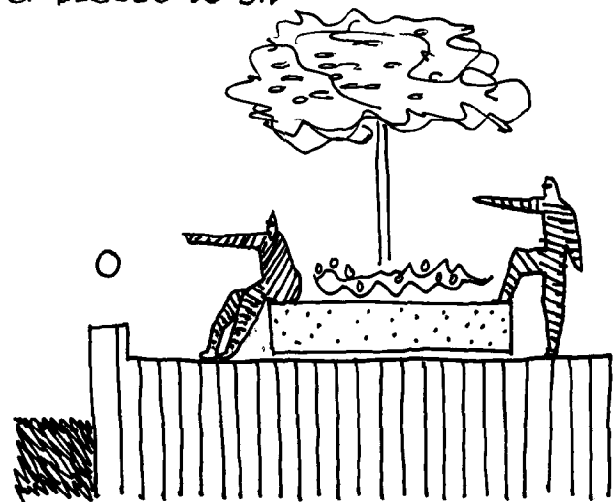
Figure 31 illustrates the design concept. The concept incorporates features which are part of both the goals and objectives and the design principles.

Figure 30: Human based scale.

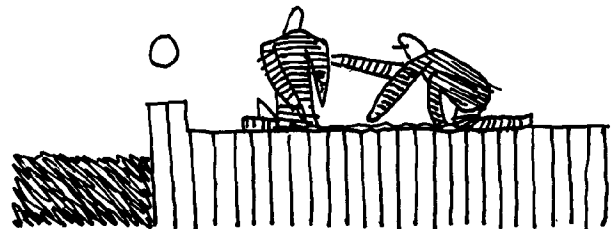
#### a. places to stand



#### b. places to sit



#### c. paved surfaces





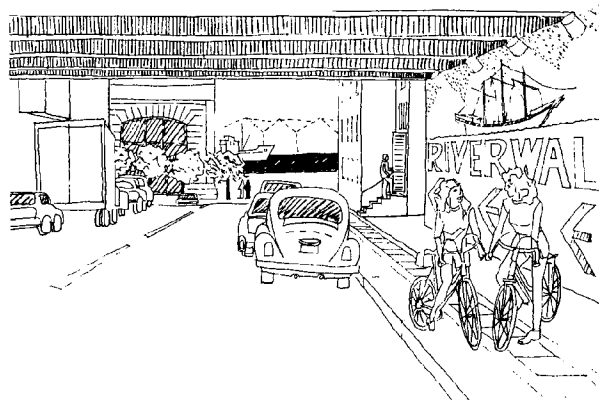


Figure 32: A typical connecting neighborhood street.

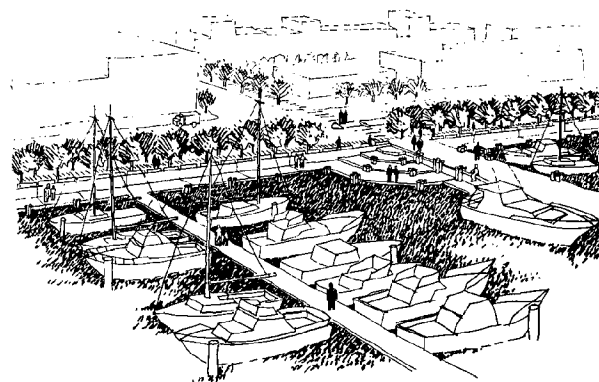


Figure 33: An overlook and landing adjacent to the proposed marina at Callowhill Street.

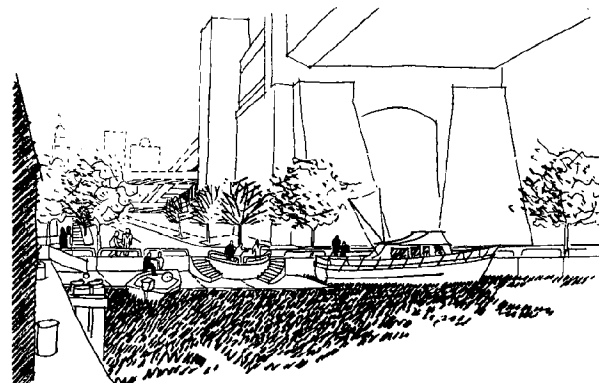
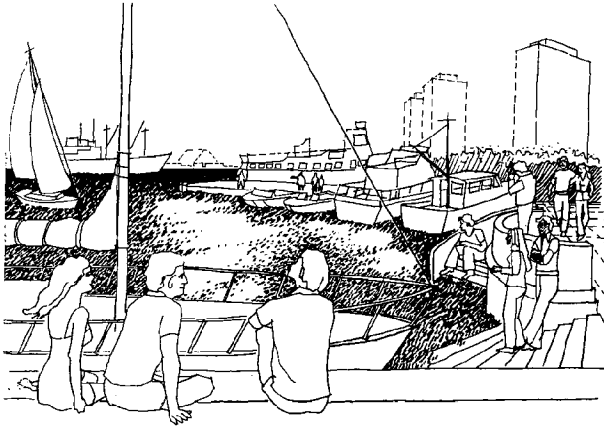
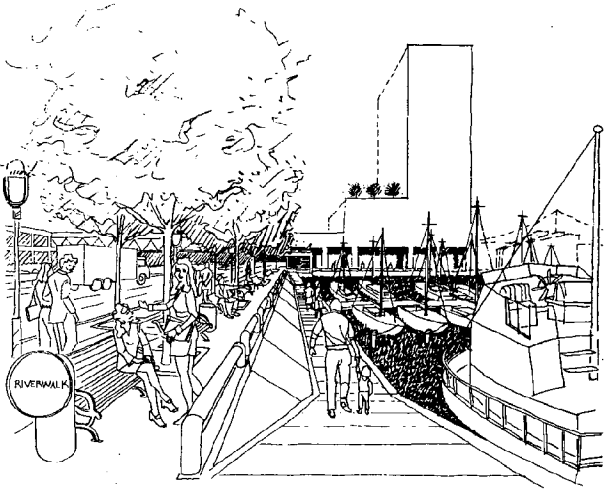


Figure 34: An overlook and landing at Race Street.



*Figure 35: A view of the proposed marina located south of Penn's Landing.*



*Figure 36: A view of the RIVERWALK adjacent to the Penn's Landing marina.*



*Figure 37: A view of the RIVERWALK and plaza adjacent to a pier.*



- o Neighborhood Connections.
- o A RIVERWALK Route.
- o Sidewalks which extend the continuity of the route through active heavy commercial and industrial areas.
- o Park sites.
- o Plazas which are part of the RIVERWALK.
- o Overlooks of the River, and
- o Landings and River access elements.

#### D. Design Features and Standards

There are nine major features to the RIVERWALK plan: each with their own set of design standards.

1. Promenade
2. Esplanade
3. Landscaping
4. Pedestrian Lighting
5. Neighborhood Connections
6. Arcades and Plazas
7. Overlooks and Landings
8. Sidewalks
9. Miscellaneous Furnishings

##### 1. Promenade

The Promenade is a clear path consisting of blue granite bordering bluestone, unit pavers between the clear path and the curb, and regularly spaced trees, decorative lights and other site features as may be desirable. The primary functions of the Promenade are to create a continuous unobstructed path and establish a series of elements which at once suggest the continuity of the path, yet also focus attention upon the short view (often the adjacent architecture).

Figure 38 illustrates the cross sectional dimension requirements: 6 foot "clear path", 5 foot square tree well, 6 foot minimum clearance from curbline to center of tree well and a variable distance to the bulkhead.

##### 2. Esplanade

The Esplanade is regarded as an additive feature as it is added to the Promenade

Figure 38: Cross sectional dimensions of Promenade.

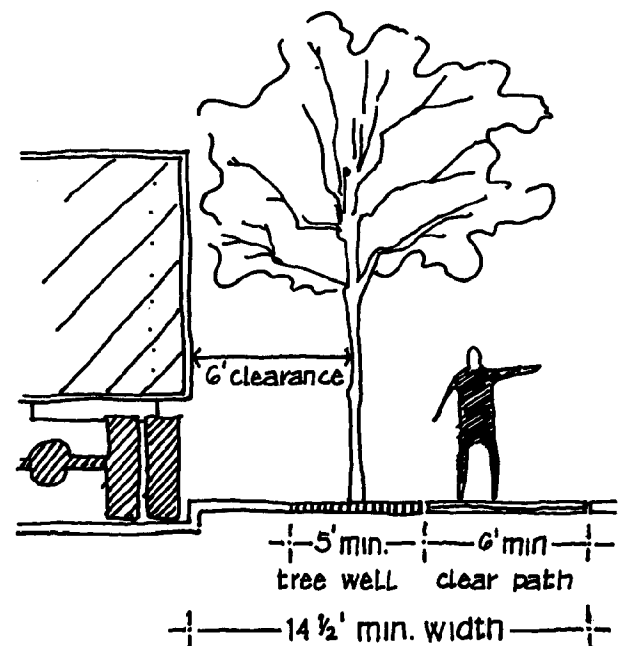
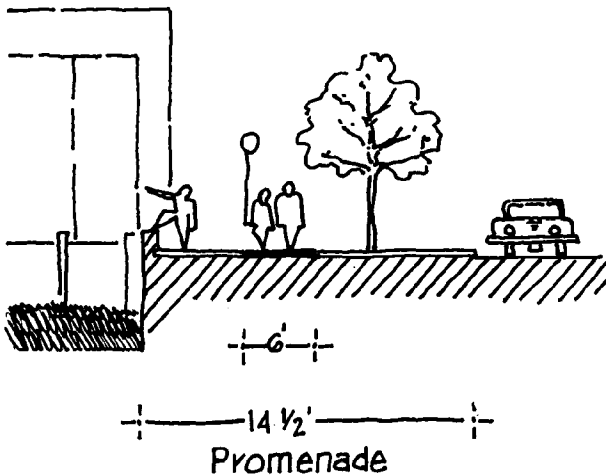
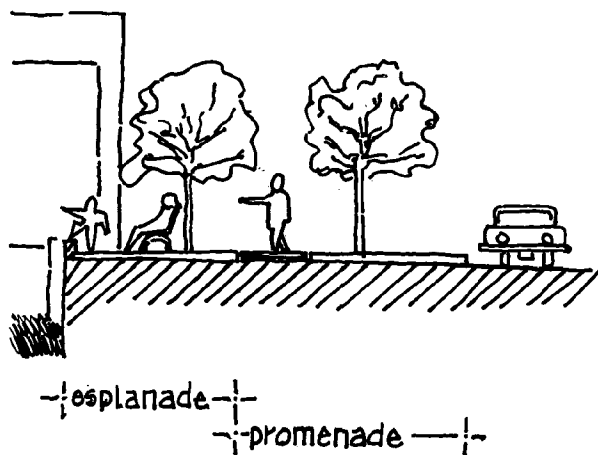


Figure 39: Promenade and Esplanade cross sectional relationships.

a.



b.



where site conditions allow it. The Esplanade only occurs adjacent to the water between pier headhouses. The primary function of the Esplanade is to create places for things to happen along the Promenade path. The Esplanade focuses attention upon the distant view of the river. This orientation is reinforced by the use of trees which have a high headed dense canopy of foliage. It provides additional paved areas and site furnishings, as well as space for new proposals as might be necessitated by specific site and future programmatic circumstances.

In both Promenade and Esplanade, the granite border at the edges of the path will continue around the 5 foot by 5 foot tree well. Granite pavers set in sand are recommended for installation within the tree well. The single row of trees for Promenade should be planted 30 feet on centers and should be of a light foliage character. For the Esplanade, the character of the trees requires a broad profile and dense canopy. Specific tree types are discussed under item 3, LANDSCAPING, which follows.

The RIVERWALK right-of-way is typically already paved with asphalt or concrete. Therefore, the RIVERWALK will normally be an overlay on top of this existing pavement. Holes will have to be punched through the existing pavement for equipment and fixture footings as well as the tree pits. The construction standards for the paving surface materials are based upon two paving base conditions: Construction of all new 6" concrete paving base where existing paving does not exist or has been disturbed or utilizing the existing street paving as a base for the RIVERWALK.

The dimensional and paving requirements which apply to the Promenade and Esplanade have four parts:

a) Waterside edge and bulkhead cap.

- b) Curb along Delaware Avenue.
- c) Paving of the "clear path".
- d) Paving adjacent to "clear path".

a) Waterside Edge and Bulkhead Cap.

The only consistent existing condition of the tops of the bulkheading structure is the fact that they vary, area to area.

All solutions will require custom treatment, but the following is offered for guidance.

- Construction of a poured-in-place concrete grade beam with reinforcing steel. This grade beam should provide a straight and positive edge restraint to the paving. The grade beam can be flush with the adjacent bulkhead material or brought up to 18" above finish grade so as to function as a continuous seating wall. See Figures 40 to 42.

b) Curb Along Delaware Avenue.

This curb should be a conventional City of Philadelphia street poured-in-place concrete curb. It should provide a six inch step up from street to RIVERWALK. See Figures 38 to 40.

c) Paving of the "Clear Path".

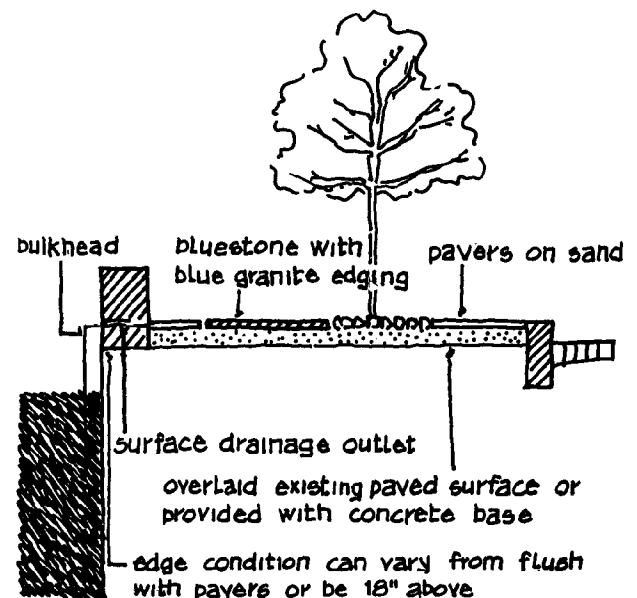
The "clear path" of the RIVERWALK shall be six (6) feet wide and paved with a combination of bluestone with blue granite edging. The blue granite edging should also ring the square tree walls. See Figures 40 to 43.

d) Paving Adjacent to the "Clear Path".

While the design, detailing and paving of the "clear path" is rigidly specified, the adjacent paved areas offer broader design possibilities. The standards for the paving of this adjacent are as follows:

- The use of unit pavers is required, their color must contrast with that of the "clear path" bluestone. (The use of poured-in-place concrete or asphalt

Figure 40: Diagrammatic cross section.



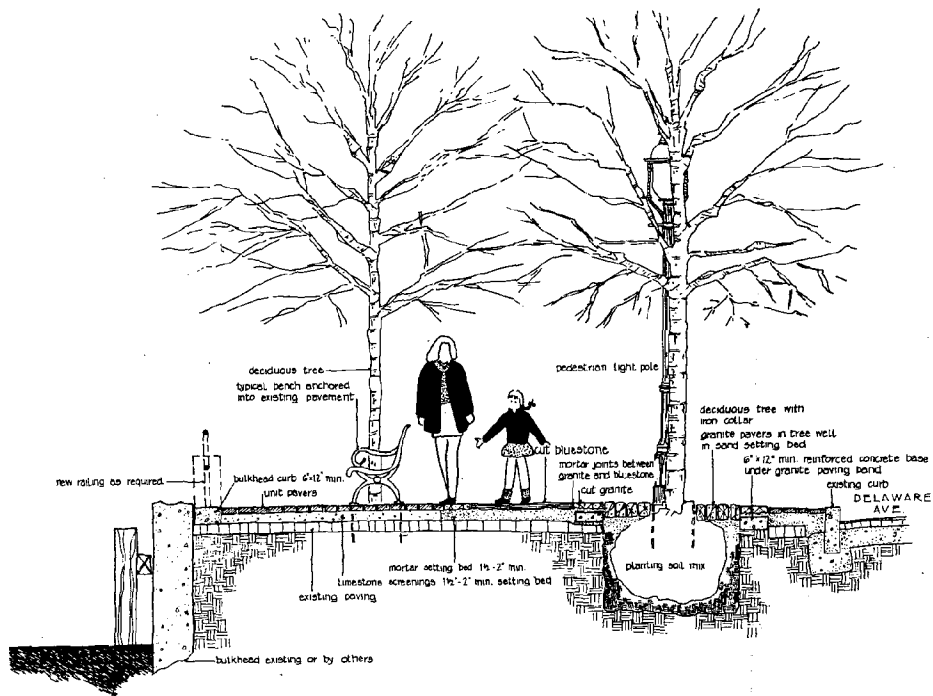


Figure 41: Paving overlaying existing base.

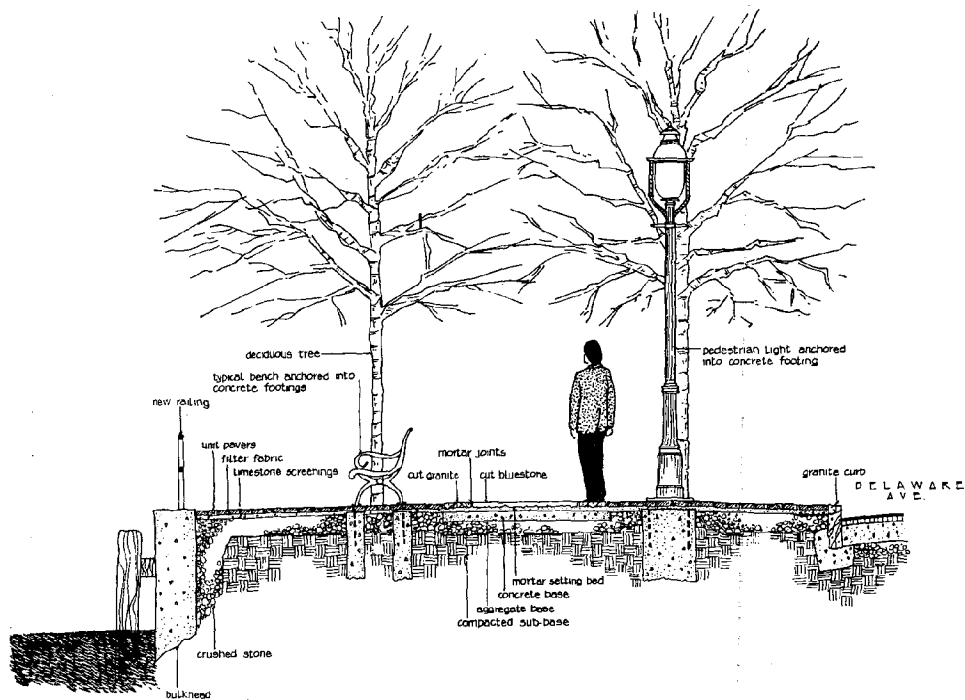


Figure 42: Paving with new base.

is not acceptable.

- Paving patterns and images are left open to future designers who may wish to select patterns which symbolize the fluidity of water, reflects an historic theme as part of an exhibit area, incorporates geometrical patterns produced solely by the geometry of the pavers selected, or an arbitrary nautical or maritime design theme. See Figures 40 to 43.

### 3. Landscaping

Trees will provide the major vertical continuity for the RIVERWALK. As this element is perceived distinctly by the ambling pedestrian, highway-speed traffic of Delaware Avenue and the viewer looking at the RIVERWALK from a distance, all three points of view must be jointly considered. Therefore, trees must have appeal both individually and as a group.

In addition to the normal concerns of selecting species for urban use, the RIVERWALK trees must occupy a narrow strip of often man-made land between a busy highway and a broad water body, and be exceptionally durable, particularly with regard to salt tolerance from road de-icing, pest resistance and hardiness. Additionally, excellent growth rate and foliage condition throughout the growing season are important.

Rather than select a single species or tree, which by erecting a monoculture exacerbates and intensifies any weaknesses of the plant material, a number of different species should be planted. Three prototypical design variations exist requiring distinct tree selection. They are:

- Promenade in Front of Headhouses. A single row of trees is required, planted 30 feet on center or less, and no closer to the curb than six feet to allow for natural branching to develop. These trees should be full formed but of a light foliage

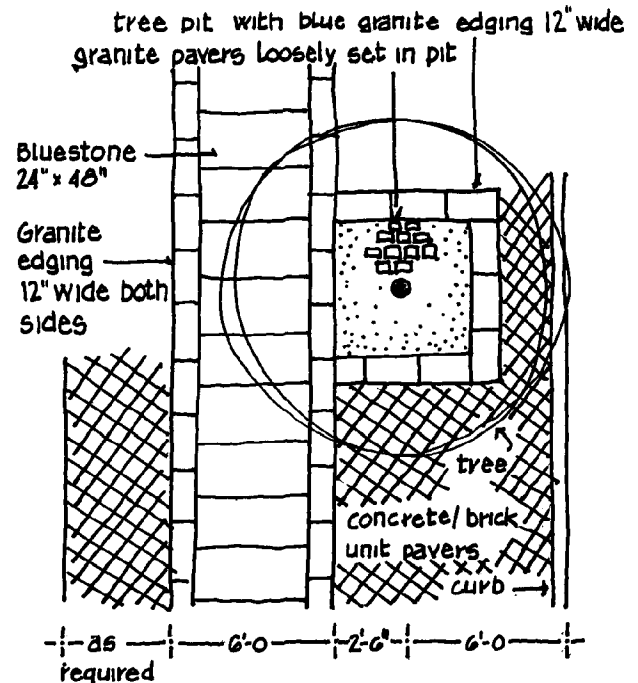


Figure 43: Plan showing paving requirements.

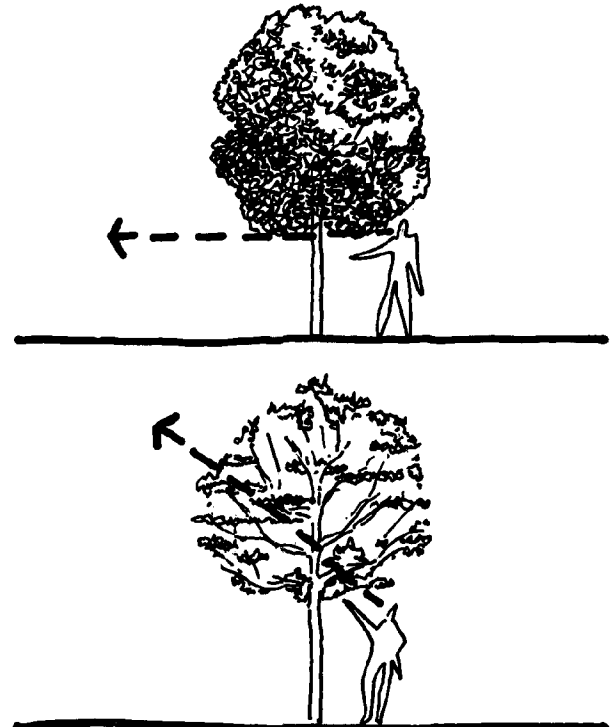


Figure 44: Desired characteristics of trees.

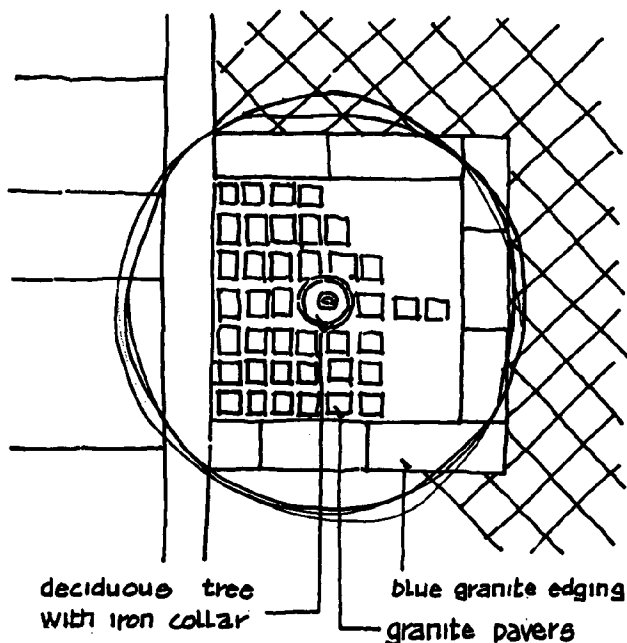


Figure 45: Paving of tree well.

character, in order to allow the close views through the tree canopy. Recommended species are Japanese Scholar Tree (*Sophora japonica*) and Thornless Honey Locust (*Gleditsia triacanthos inermis*).

- b. Narrow Promenade. As above, but in areas of restricted width, columnar trees should be used: A tree such as the following: Sentry Ginkgo (*Ginkgo biloba fastigiata*).
- c. Promenade With Esplanade. In areas adjacent to water or where the width allows, two rows of trees with dense foliage are recommended to provide a full canopy and frame the long views under the canopy. Recommended trees for these areas are English Oak (*Quercus robur*) and Chinese Elm (*Ulmus parvifolia*). Trees in the rows should be planted not more than thirty feet on center, with eleven feet between rows.

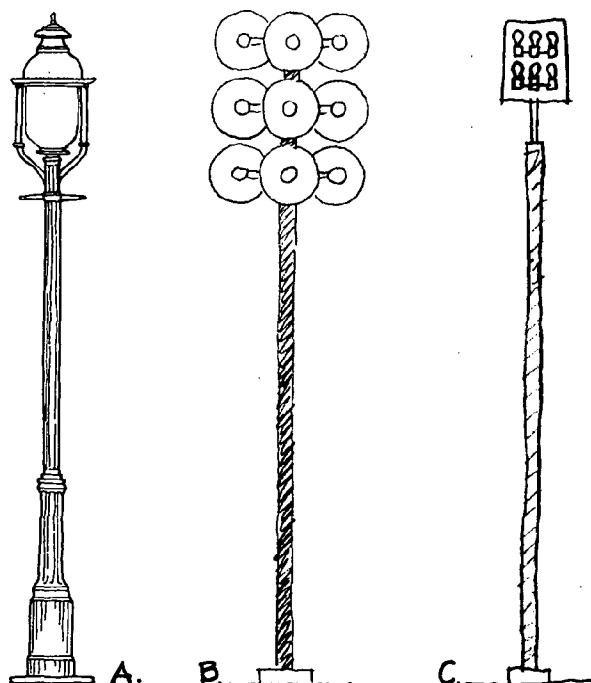


Figure 46: Required and typical light fixtures and standards.

Installed tree size should be large enough to avoid prolonged shock. A minimum caliper size of 5 to 5 1/2 inches is recommended. In the tree pits for all trees, a surface of unit pavers should be set in a sand base, allowing for the penetration of water for irrigation, but deterring soil compaction adjacent to the roots.

In summary, trees have been selected which will allow the observer to focus on both the long and short view attributes of the riverfront area, which will survive and flourish under the harsh conditions which can be anticipated, and which will provide aesthetics ranging from the continuity of an allee at the large scale to sustaining interest in the details at the pedestrian scale.

#### 4. Lighting

Three types of light fixtures have been suggested for use on the RIVERWALK:

Type A: Welsbach "Boulevard" light with  
10'-6" "Broadway" post.

Type B: Lightolier "Cluster Globes"

Type C: Sterner "Nicollet"

Type A: Lights are for general illumination along the Promenade and Esplanade. Minimum light levels should be .5 footcandles. Their spacing will normally be 60 feet on center.

Type B & C lights are contemporary and ornamental and may be used in lieu of Type A in the plaza areas. Lighting levels and requirements will vary and should be resolved on a case by case basis.

Lighting from other sources such as bollards, up-lights, spots or floods are generally acceptable as long as they supplement rather than replace the Type A light fixture.

#### 5. Neighborhood Connectors

In order to connect the RIVERWALK with the existing urban fabric of Philadelphia, it is desirable to improve access from the RIVERWALK west as far as Front Street for connections south of Ben Franklin Bridge. For those connections north of Ben Franklin Bridge, improvements should be extended to Second Street. These connectors should contain the following elements:

- a. A feature strip of the same bluestone and blue granite as in the RIVERWALK, but half the width. Therefore, the bluestone would be two feet in width while the blue granite edge, would be six inches wide. This pattern should be built into the existing sidewalks.
- b. Signage, prominently located to signal the direction and accessible passage to the RIVERWALK. This can be incorporated onto bollards, adapted nautical elements such as ship ventilators and/or informative display units.

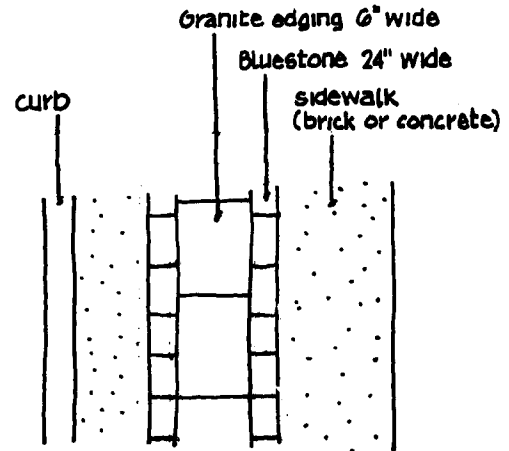


Figure 47: Neighborhood Connector Feature Strip.

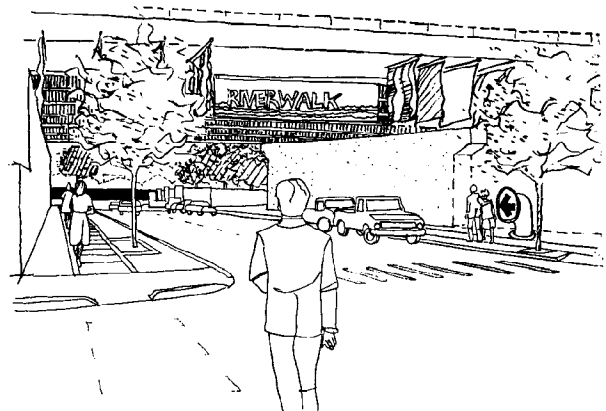


Figure 48: View along typical Neighborhood Connector.

Figure 49: Arcade and Plaza relationships.

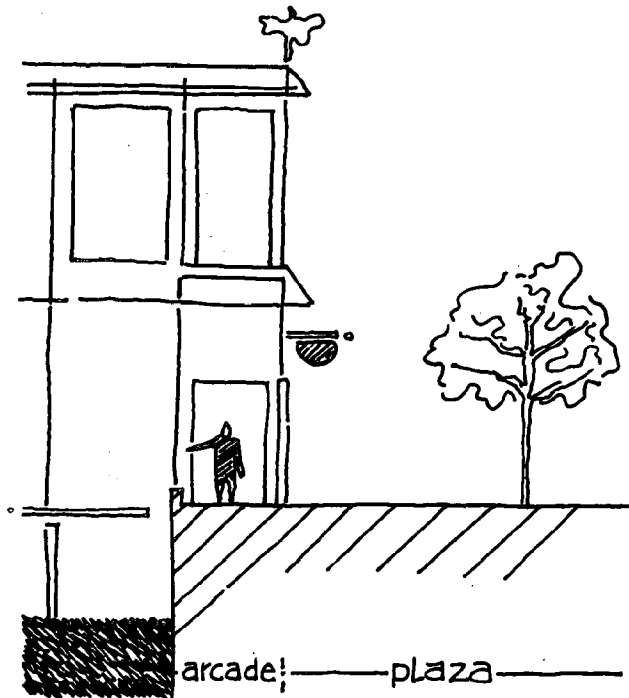
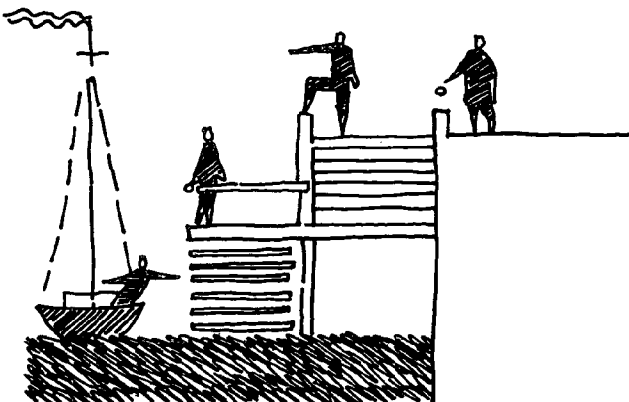


Figure 50: Overlooks and landings.



- c. Lighting. If necessary, additional lighting along the connector should be identical to that used on RIVERWALK Promenade and Esplanade.
- d. Use of Banners and Flags. Banners and flags should be used to help indicate access to the RIVERWALK. At the I-95 overpasses, the use of colorful banners, murals and additional lighting is particularly appropriate.

#### 6. Arcade and Plaza

It may be advantageous, in locations where the existing or proposed building line is adjacent to a narrow portion of right-of-way, to extend the space available to RIVERWALK into the building by locating an arcade on the ground level. This treatment is attractive given the need for pedestrian shelter along the RIVERWALK. As in many locations, the ground level is within the U.S. Army Corps of Engineer's estimated 100 year floodplain and the use of a portion of ground floor space for an arcade is compatible with such conditions.

A plaza will provide additional space on which to concentrate amenities for pedestrians who will frequent the RIVERWALK. This plan identifies prime locations for plazas, locations sensitive to accessibility via neighborhood access corridors and to locations with favorable views, and appropriate adjacent uses. It is anticipated that these plazas will be public, surrounded by strong architectural/urban elements, and provide opportunities for commercial activities at the adjacent ground level.

#### 7. Overlooks and Landings.

Philadelphia's waterfront offers outstanding opportunities for visual overlooks, and physical access to the water at new landings. The design of landings are complicated by the fact that the Delaware River water height fluctuates both seasonally in terms of



amount of water flowing to the sea, and daily in terms of the effects of tides. Nevertheless, landings and overlooks are not only feasible along the RIVERWALK, but would inevitably become a focal feature attracting much of the public to the RIVERWALK. Even with the twice daily fluctuation of over six feet between high and low tide, it is possible to create structures which would provide the public with constant access to the river water level.

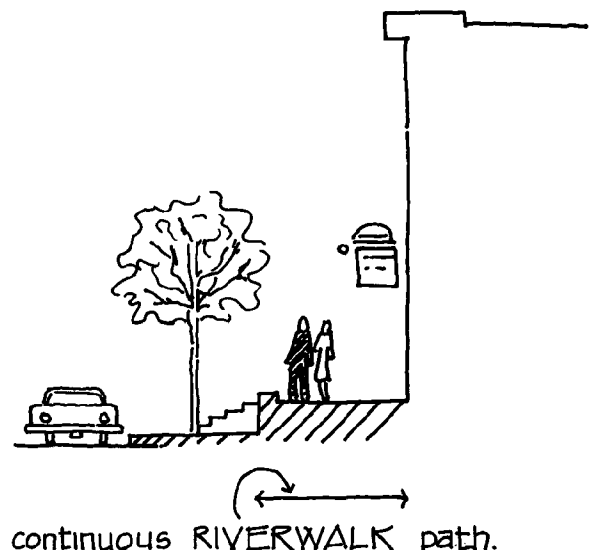
Both physical access to the river, with its associated uses such as water taxis, excursion boats, fishing, swimming, etc., and visual access, allowing the public to become involved with the dramatic daily activity of the river, are integral and significant elements of the RIVERWALK plan.

Each overlook and landing is regarded as a custom design problem and as an "add-on" to the RIVERWALK. It is expected that the overlook and landing will be constructed in or overhanging the water. Each design should provide railings, steps and landings that lead into the water. The steps and landings should be designed to drain water as the water level changes according to seasonal and tidal conditions.

#### 8. Sidewalk

The sidewalk will vary in width from six to twelve feet or more, depending upon the anticipated quantity of pedestrian traffic or the existing right-of-way. The sidewalk is recommended as an interim solution in areas experiencing a use modification from predominantly industrial to residential and commercial. As these areas are redeveloped, the continuation of the RIVERWALK standard Promenade paving should replace the sidewalk paving. Alternative walk alignments should be considered at that time to align the RIVERWALK as closely as possible to the river. Although sidewalks will be typically paved with concrete, unit

Figure 51: Raise the RIVERWALK up to floor level of adjacent piers.



pavers provide an optional alternative more compatible with other portions of the RIVERWALK. The use of the sidewalk is anticipated in two areas:

- The area north of Spring Garden Street and south of Washington Avenue currently includes a number of industrial parcels that may eventually shift to residential, commercial, or mixed use within the next twenty year period. Sidewalks in these areas are viewed as an interim solution only.

Figure 52: Typical Bench.

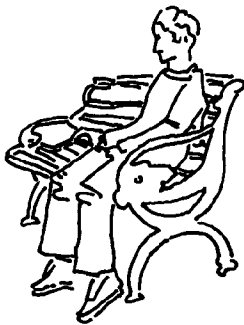


Figure 53: Typical Litter Receptacle

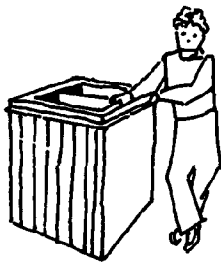
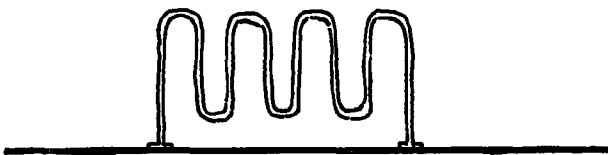


Figure 54: Typical Ribbon Rack for Bicycle storage.



#### 9. Miscellaneous Furnishings

- a. Benches. Provide one linear foot of bench for every 3,000 square feet of RIVERWALK. Steps, seats in amphitheatres and seating in open air cafes shall be additional and shall not be substituted for the above ratio. Benches shall be as manufactured by the Bench Manufacturing Company, P.O. Box 66, Essex Street Station, Boston, MA 02112, with RIVERWALK lettered on the side.
- b. Litter Receptacles. Trash receptacles are to be provided as necessary, but not less than one for every five benches. Trash receptacles shall be as manufactured by the Bench Manufacturing Company, P.O. Box 66, Essex Street Station, Boston, MA.
- c. Bollards. The use of bollards is recommended where necessary to control the conflicts between vehicular (emergency access or other) and pedestrian circulation. They should be placed closely enough together to avoid the need for chains. They should be a minimum of 12" in diameter, 28" high and formed from metal or stone. (No wood or poured-in-place concrete.) The top should be suitable for sitting on and their location integrated into the paving. Separate foundations

with expansion joints at the base should be provided.

- d. Bicycle Storage. Provide "The Ribbon Rack" manufactured by Brandir Enterprises, Inc., 200 Park Avenue, Suite 303 E, New York, NY 10017.
- e. Signage and Graphics. The standards for signage and graphics shall conform to the "Design Guidelines for Symbols and Symbol-Signs"; Chapter Six of Signage: Graphic Communication in the Built World by Charles B. McLendon and Nick Blackistone.

#### E. Prototypical Designs

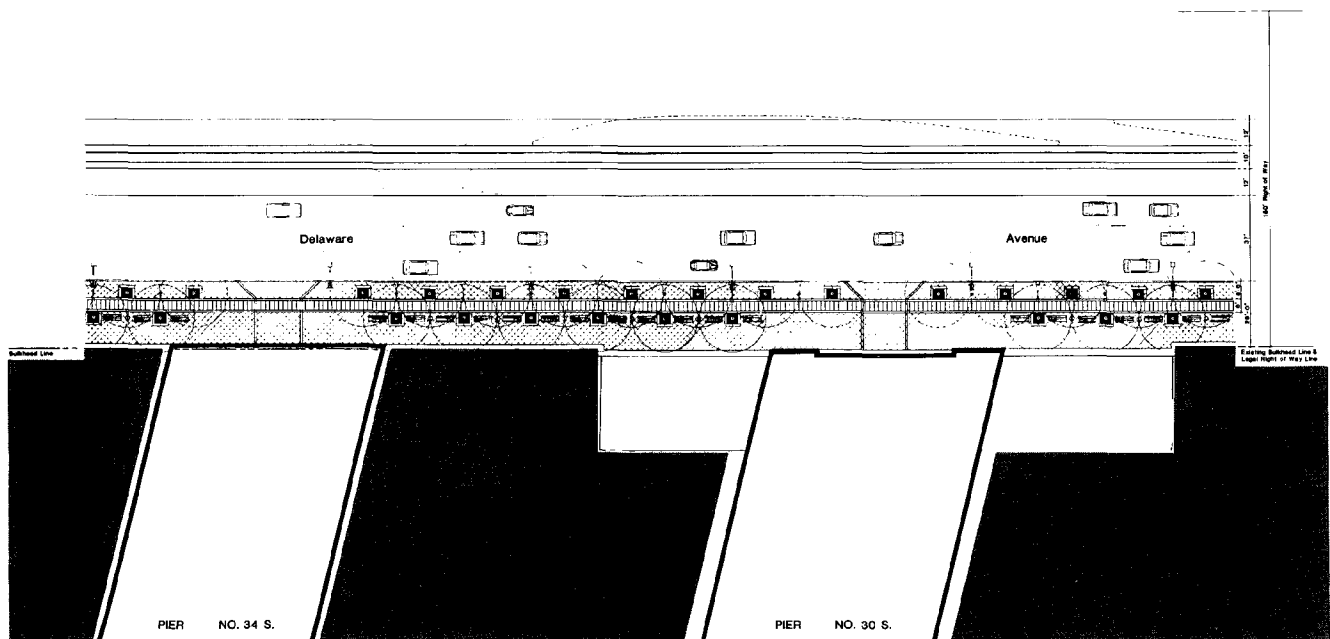
Prototypical designs have been prepared for three areas of the RIVERWALK:

- Prototype No. 1 - Pier 30S to 34S
- Prototype No. 2 - Piers 3N to 5N
- Prototype No. 3 - Pier 19N

These three areas illustrate a number of the design features which have been discussed.

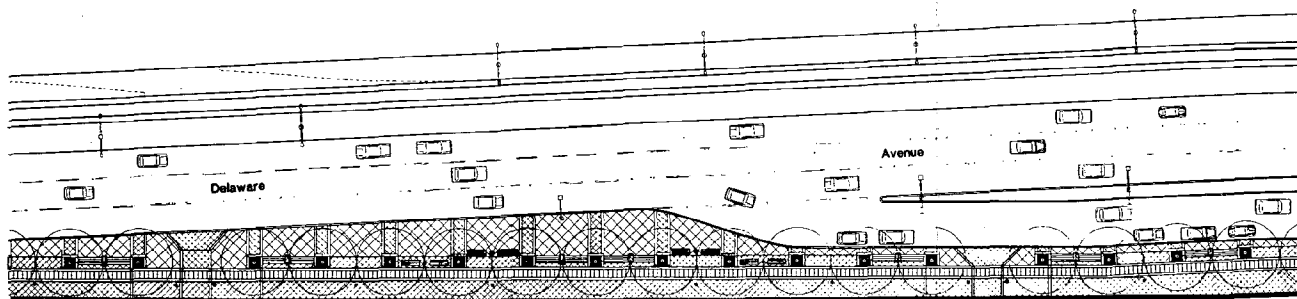
The Prototype No. 1 design for Pier 30S - 34S illustrates the design solution for a condition where only 30 feet of right-of-way exists between the third moving lane on Delaware Avenue and the bulkhead line. In this design no vehicular service lane is provided and the full 30 feet is utilized for the RIVERWALK. Small plazas are shown in front of both Piers 30S and 34S. Sections of the RIVERWALK which face the River are composed of Promenade and Esplanade. Figure 55 Prototype No. 1 Piers 30 South to 34 South.

Figure 55: Prototype No. 1 Piers 30 South to 34 South.



The Prototype No. 2 design for Piers 3N - 5N illustrates the design solution for a condition where the available right-of-way varies from 22 to 50 feet in width. In this design there is a mix of Promenade without and Promenade with service lanes. Piers 3N and 5N have existing first floors which are approximately three to four feet above street level and the design assumes that the Promenade portions of the RIVERWALK are raised to within one foot of the floor levels of the Piers. Transition from the higher to lower grade level would occur between the tree wells.

Figure 56: Prototype No. 2 Piers 3 North to 5 North.

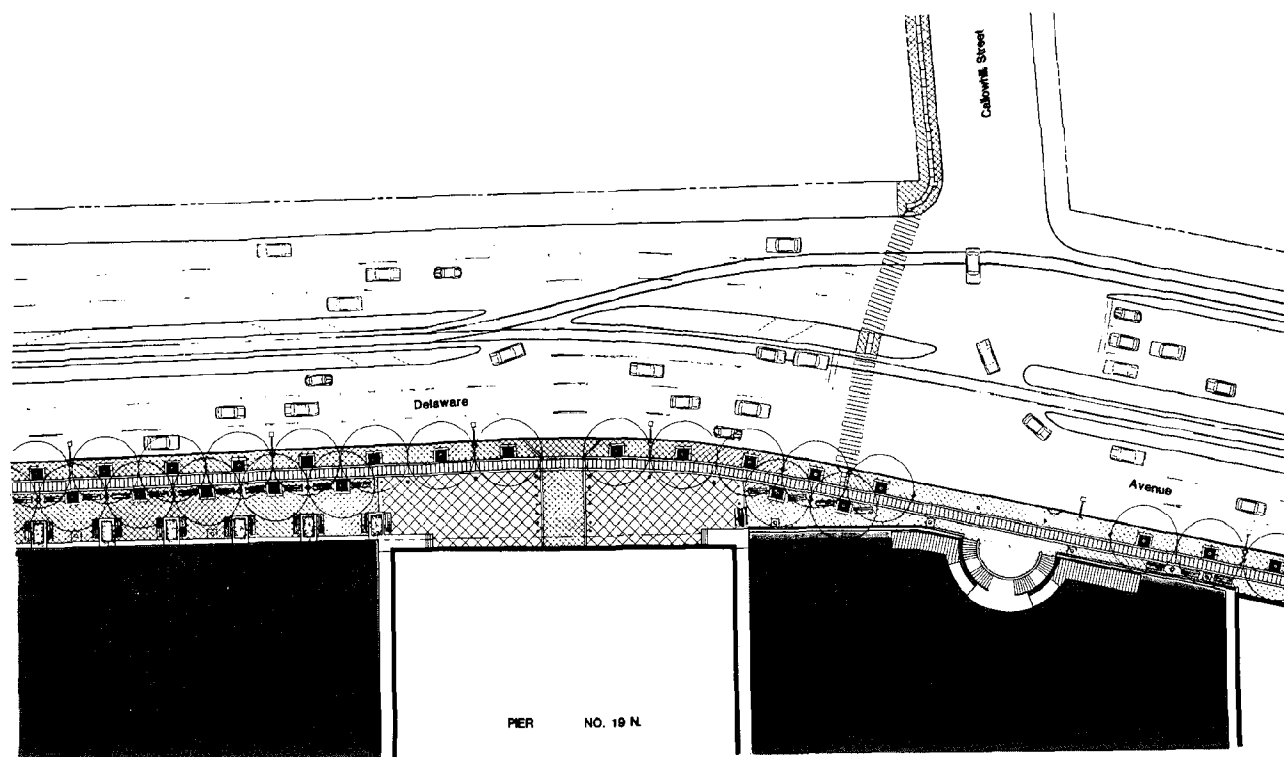


PIER NO. 3 N.

PIER NO. 5N.

The Prototype No. 3 design for Pier 19N illustrates a condition where the right-of-way dimensions vary from 20 to 43 feet. The design illustrates Esplanade, Promenade, a plaza in front of Pier 19N, a neighborhood connection at Callowhill Street, and a landing and overlook at the foot of Callowhill Street.

Figure 57: Prototype No. 3 Pier 19 North.





## 4. Design Guidelines and Standards

### A. Introduction

The design guidelines and the design options have been studied on a block-by-block basis along the RIVERWALK route and are indicated in Table 2.

The recommended RIVERWALK design, with explanatory text and segment-by-segment plans follows Figure 58 and Table 2.

### B. The Guidelines by Segment

As indicated in Chapter Two, the route for the RIVERWALK has been broken into nine segments. The first segment begins at the south end of the route (Reed Street) and the ninth segment ends at the north end of the route (Penn Treaty Park). Table 2 indicates the block-by-block conditions of the potential RIVERWALK route. Also indicated are a series of design options which were explored for each block and each segment. Each of the design options represents a combination of Promenade with additional features, each of which increases the right-of-way required for its accommodation.

The improvement options are explained below:

Option A: Promenade (Minimum standard), 14'-6" wide.

Option B: Promenade + Minimum Esplanade, 25'-0" wide.

Option C: Promenade with service road, min. 33'-0" wide.

Option D: Promenade + minimum Esplanade with service road, min. 43'-0" wide.

In the northern segments of the RIVERWALK route where the route passes through or along active industrial and/or heavy commercial/utility land uses, a conventional twelve (12) foot wide sidewalk improvement is recommended as an interim solution to the need for route continuity. In the future, as land uses change in this area we recommend further study of the RIVERWALK alignment to achieve an upgrading to at least the minimum standard of the Promenade section and a route location which provides for frequent access to the river.

There are a maximum of eight design items which are utilized in our segment-by-segment recommendations. Not all segments have all items. The design items are as follows:

1. Neighborhood linkages.
2. Interim Sidewalk (in industrial areas).
3. Promenade (the minimum solution).
4. Promenade plus Esplanade.
5. Promenade plus Service Road.
6. Plaza.
7. Arcade.
8. Overlooks (and access to the river).

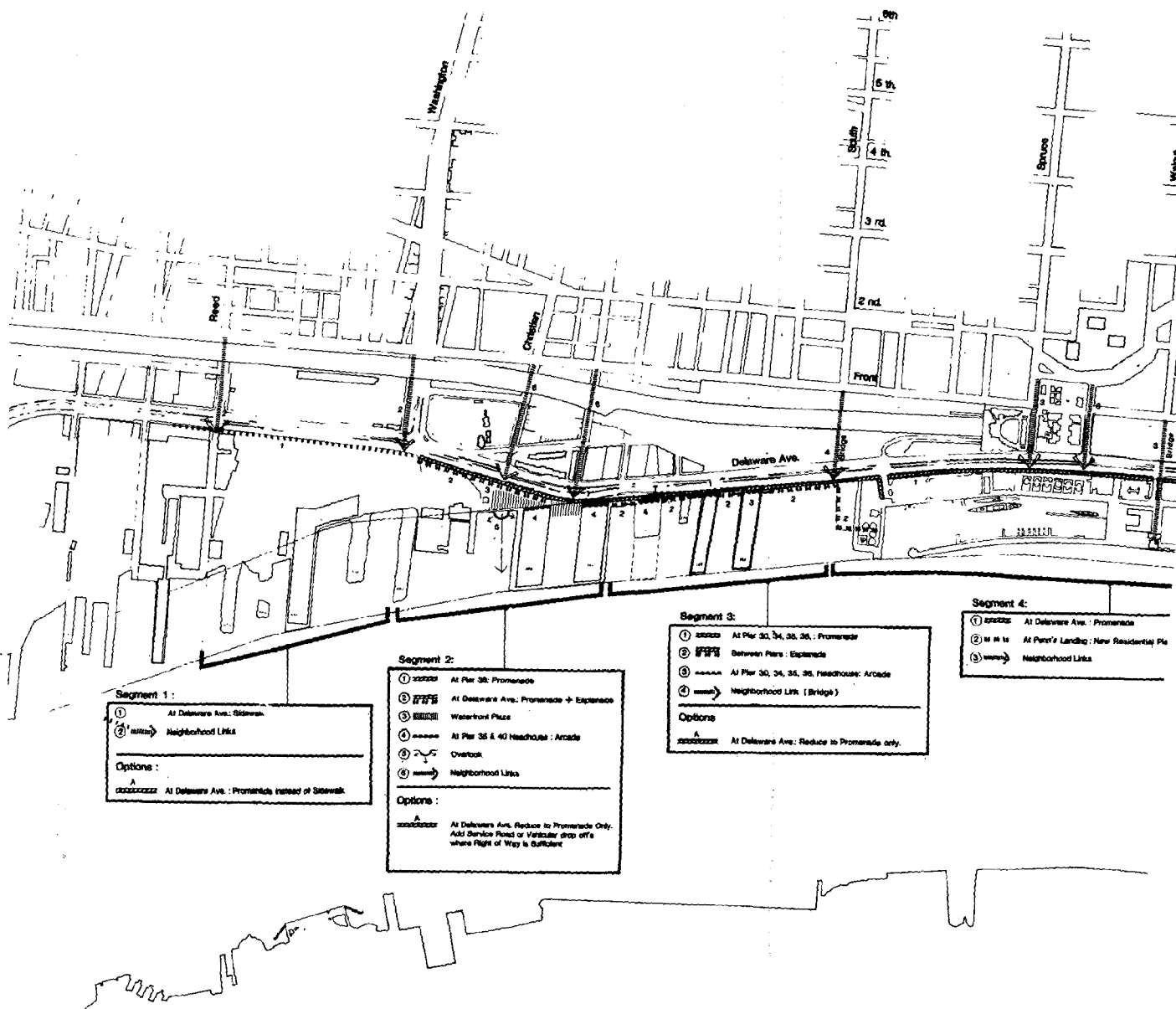




Figure 58: Recommendations and Options.

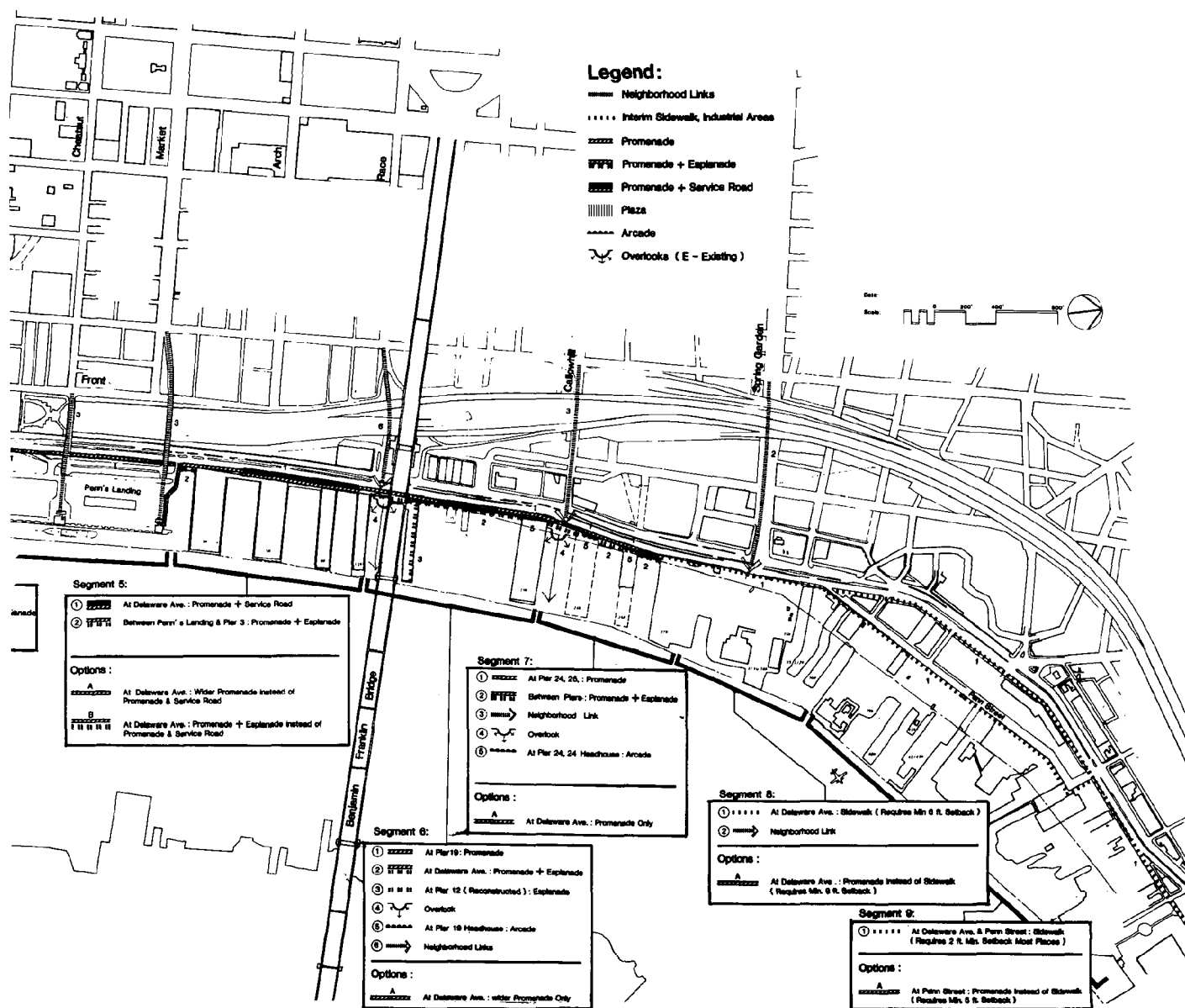


Table 2: Design Alternative Analysis  
Riverwalk, Central Delaware  
Riverfront, Philadelphia, PA.

	Location Street to Street (South to North)	Existing Sidewalk (Feet) R.O.W.	Service Rd. Prop. or Ex. R.O.W.	Total (Feet) Potential R.O.W.	Option A Min (14'-6")	Option B Min (25'-0")	Option C Min (41'-6")	Option D Min (52'-0")	Sidewalk (Feet) Min (12'-0")	
1.	Reed-Washington	18	0	18	(poss.)	(+6) (7'-0")			(poss.)	
2a.	Wash.-Christian	varies (100-32-130)	0	32-130	(poss.)	(poss.)	(+6) (9'-6")		(poss.)	
2b.	Chris.-Queen	varies (140-40-30)	0	30-140	(poss.)	(poss.)	(+6) (11'-6")		(poss.)	
3a.	Queen-Pier 30	30	0	30	(poss.)	(poss.)	(+6) (11'-6")		(poss.)	
3b.	Pier 30-South	0	28	28	(poss.)	(poss.)	(+6) (13'-6")		(poss.)	
4.	South-Lombard	28	0	28	(poss.)	(poss.)	(+6) (13'-6")		(poss.)	Options A and B are possible if 30 feet Utility Easement is required.
	Lombard-Spruce	10	0	10	(+6) (4'-6")	(+6) (15'-0")			(+6) (2'-0")	
	Spruce-Dock	10-18	0	10-18	(+6) (4'-6")	(+6) (15'-0")*			(poss.)	
	Dock-Walnut	18-25	0	18-25	(poss.)	(+6) ( 7'-0")*			(poss.)	
	Walnut-Chestnut	12	0	12	(+6) (2'-6")	(+6) (13'-0")			(poss.)	
	Chestnut-Market	8-6	0	8-6	(+6) (8'-6")				(+6) (6'-0")	
5.	Market-Pier 3N	20+	0	20+	(poss.)	(+6) (15'-0")			(poss.)	
	Pier 3N-Pier 5N	4	18-46	22-50	(poss.)	(+6) (3'-0")	(+6) (19'-6")*			
	Pier 5N-Pier 11N	4	44	48	(poss.)	(poss.)	(poss.)	(+6) (4'-0")		
6.	Pier 11N-Pier 12N	13-9	30	43-39	(poss.)	(poss.)	(+6) (2'-6")* (+6) (13'-0")*			
	Pier 12N-Vine	9-4	30-25	39-29	(poss.)	(poss.)	(+6) (12'-6")*			
	Vine-Callowhill	6	24-25	30-40	(poss.)	(poss.)	(+6) (11'-6")* (+6) (22'-0")*			
7.	Callowhill-Pier 27N	8	12-23	20-35	(poss.)	(+6) (5'-0")*				
8.	Pier 27N-Fairmount	18-6	0	6-18	(+6) (8'-6")	(+6) (19'-0")			(+6) (6'-0")	
9a.	Fairmount-Laurel	20	0	20	(poss.)	(+6) (5'-0")				
	Laurel-Shackamaxon	13	25	38	(poss.)	(poss.)	(+6) (3'-6")			
	Shackamaxon-Marlbrough	12	18	30	(poss.)	(poss.)	(+6) (11'-6")			
	Marlbrough-Columbia	10	0	10	(+6) (4'-6")	(+6) (15'-0")			(+6) (2'-0")	
9b.	Penn Street	10	0	10	(+6) (4'-6")	(+6) (15'-0")			(+6) (2'-0")	

KEY: Options: (poss.) Possible  
Sidewalk (Min. 12 feet) (+6) (6'-0")\* Require Setback of 6'-0"

A. Promenade (Min. 14'-6" feet)  
B. Promenade and Esplanade (Min. 25 feet) \*Varied Setback Requirement  
C. Promenade and Service Road (41'-6" feet)  
D. Promenade and Esplanade and Service Road (52'-0")

SEGMENT 1: Reed Street to Washington Avenue

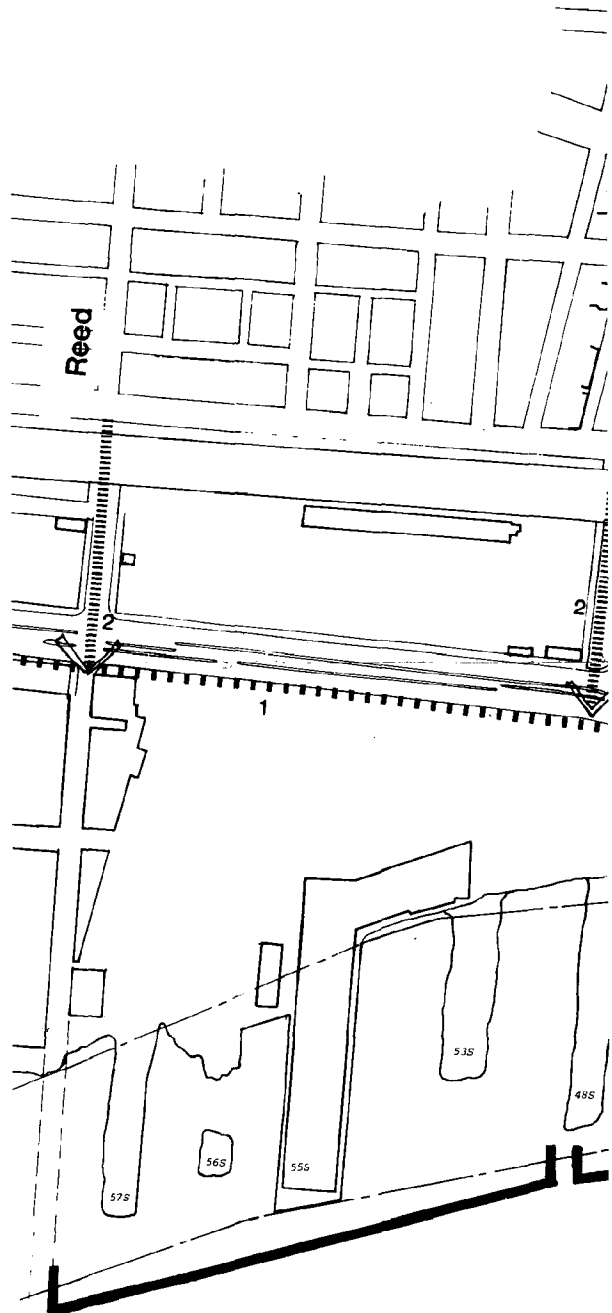
Two types of improvements are recommended:

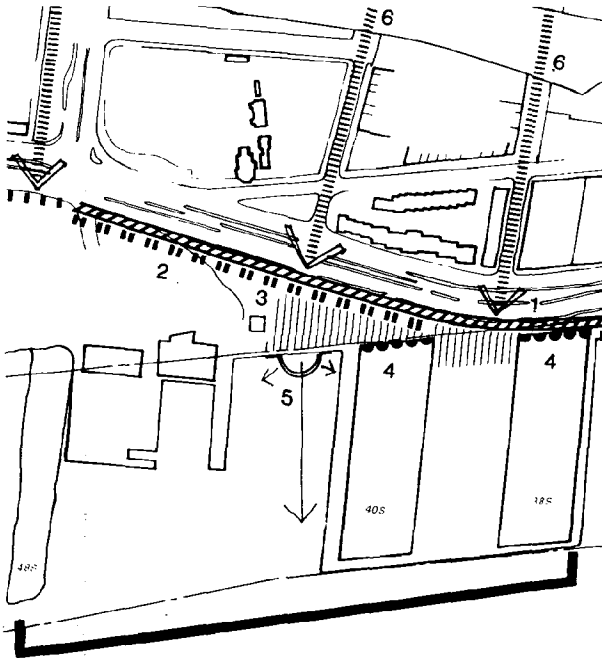
1. A sidewalk along Delaware Avenue.
2. Two neighborhood links: Reed Street and Washington Avenue.

There is an option of constructing a full Promenade along Delaware Avenue.

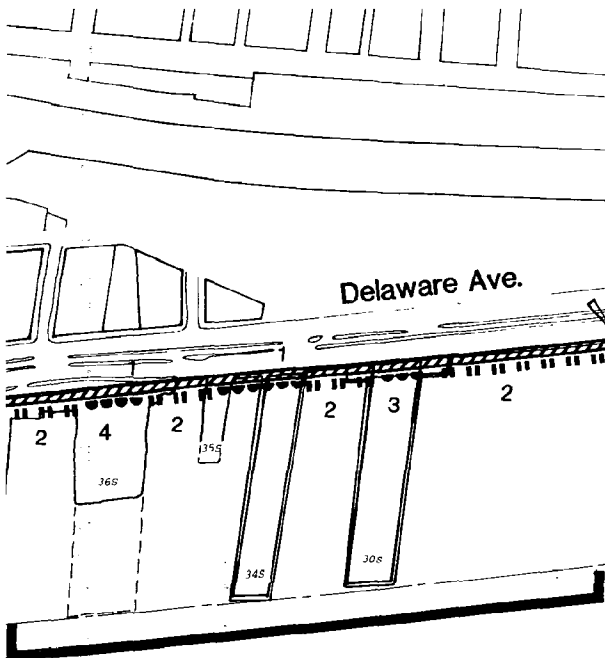
Note: The Central Riverfront District Plan, as adopted by the Philadelphia City Planning Commission, recommended long term development of this area for mixed commercial and residential uses. Because of the controversial nature of this recommendation, the Planning Commission agreed to a one year postponement of further mixed use redevelopment planning for this waterfront site. The Planning Commission further agreed to support, in the near term, the City Council resolution calling for the industrial and port related reuse of this site. As a result, improvements to pedestrian access to and along the waterfront are limited to a sidewalk on Delaware Avenue and neighborhood links at Reed Street and Washington Avenue. Should this site be developed for residential and commercial uses, in the long term, the standards for RIVERWALK should be extended south to Reed Street along Delaware Avenue. At that time additional pedestrian access should be provided to the water's edge and a mid-block neighborhood connection added (parallel to Reed and Washington but crossing Delaware Avenue at the mid-block between Reed and Washington).

*Segment 1*





Segment 2



Segment 3

#### SEGMENT 2: Washington Avenue to North Side of Pier 38S

Six types of improvements are recommended:

1. A promenade in front of Pier 38S.
2. A promenade plus esplanade along Delaware Avenue.
3. A waterfront plaza.
4. An arcade along the streetside headhouses of Piers 38S and 40S.
5. An overlook and access to the River.
6. Two neighborhood connections: Christian and Queen Streets.

Between Pier 40S and Washington Avenue there is an option to reduce the RIVERWALK to a promenade section only, adding a service road and drop off where the R.O.W. is sufficient.

#### SEGMENT 3: North Side of Pier 38S to Penn's Landing

Four types of improvements are recommended:

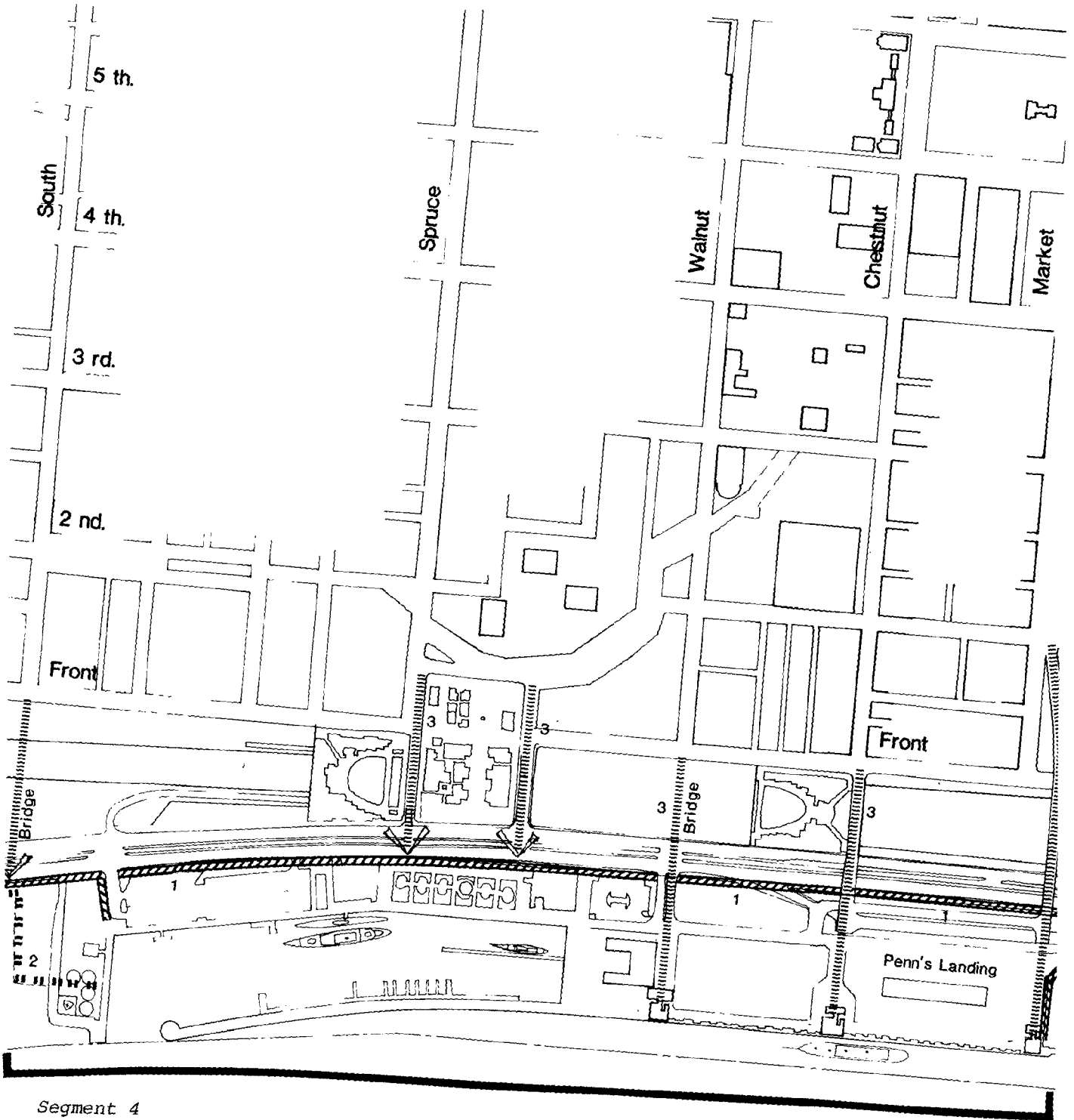
1. A promenade in front of Piers 30S, 34S, 35S and 36S.
2. Promenade plus esplanade between piers.
3. An arcade included within the piers 30S, 34S, 35S and 36S.
4. A neighborhood connection at South Street (bridge connection from Front Street to the Penn's Landing residential pier).

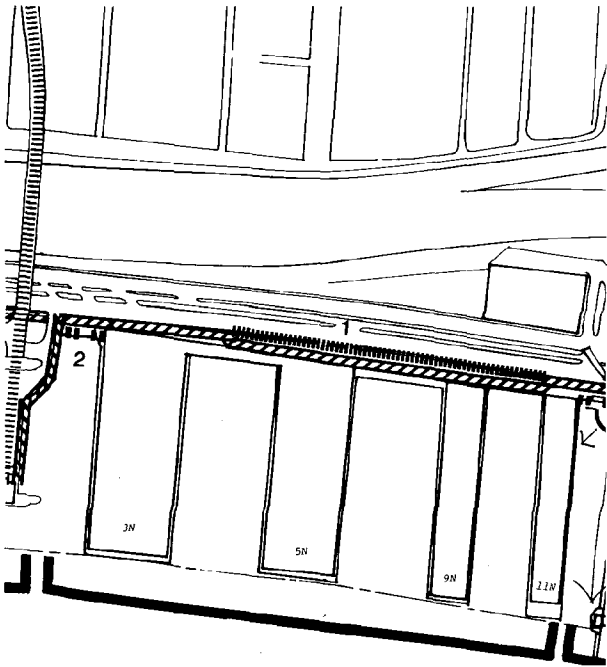
There is an option to reduce improvements along Delaware Avenue to only the promenade.

#### SEGMENT 4: Penn's Landing

Three types of improvements are recommended:

1. Promenade along Delaware Avenue with connections into the existing Penn's Landing pedestrian areas.
2. An esplanade along the south side of the residential pier connecting into the existing Penn's Landing pedestrian areas.





Segment 5

3. Five connections with the adjacent neighborhood (Spruce, Dock, Chestnut and Market Street plus a new pedestrian bridge extending pedestrian access from Front and Walnut Street).

SEGMENT 5: North of Penn's Landing to Pier 11 North

Two types of improvements are recommended:

1. A promenade plus service road along a portion of Delaware Avenue.
2. Promenade plus esplanade between Penn's Landing and Pier 3N.

There are two improvement options.

- A) In lieu of item #1 use only a wider promenade.  
or B) In lieu of item #1 or option A, use a promenade plus esplanade.

SEGMENT 6: Pier 11 North to Callowhill Street

There are six improvements recommended:

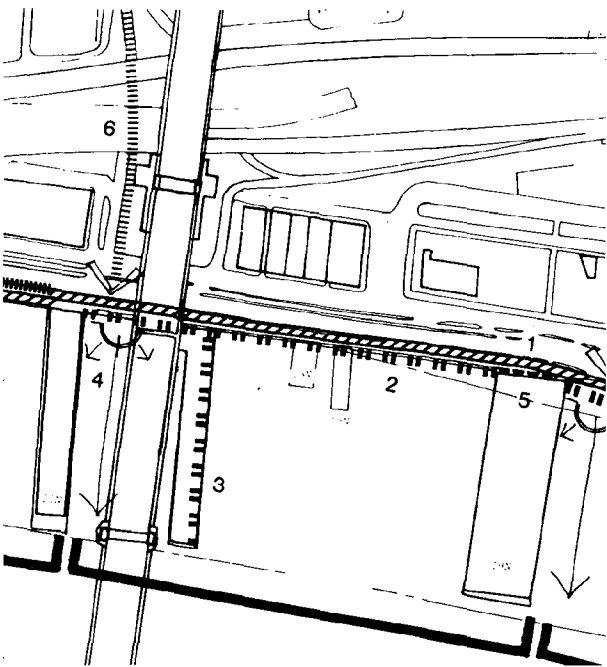
1. A promenade at Pier 19N.
2. A promenade plus esplanade along Delaware Avenue.
3. An esplanade along reconstructed Pier 12N.
4. An overlook and access to the River under the Franklin Bridge.
5. An arcade at Pier 19N headhouse.
6. A connection to the adjacent neighborhood at Race Street.

There is an option along Delaware Avenue to provide only a wider promenade in lieu of promenade plus esplanade.

SEGMENT 7: Callowhill Street to the Southside of Pier 27N

Five types of improvements are recommended:

1. Promenade at Piers 24N and 25N.
2. Promenade plus esplanade between the Piers.
3. An overlook and access to the River at foot of Callowhill Street.



Segment 6

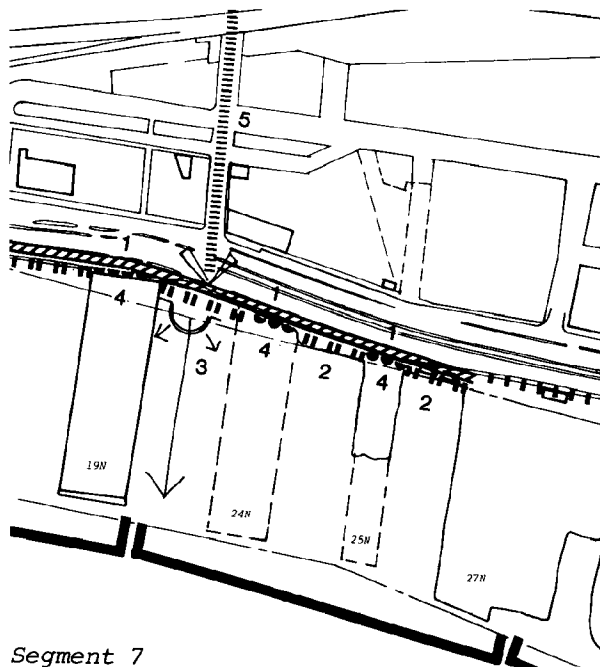
4. An arcade at Piers 24N and 25N headhouses.
5. A neighborhood connection between the RIVERWALK and the adjacent neighborhood on Callowhill Street.

This is an option to provide only a promenade along Delaware Avenue in lieu of item #2.

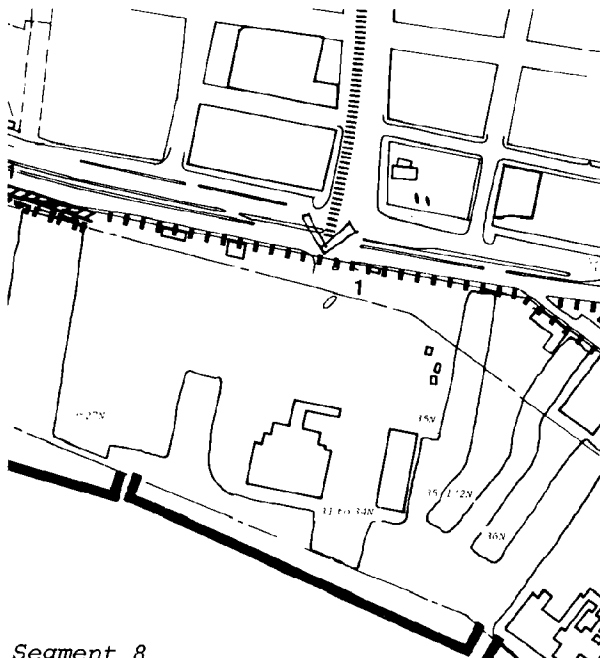
SEGMENT 8: Pier 27N to Fairmount Street  
Two improvements are recommended:

1. A sidewalk along Delaware Avenue (an interim solution until land use changes occur adjacent to the route).
2. A neighborhood connection along Spring Garden Street.

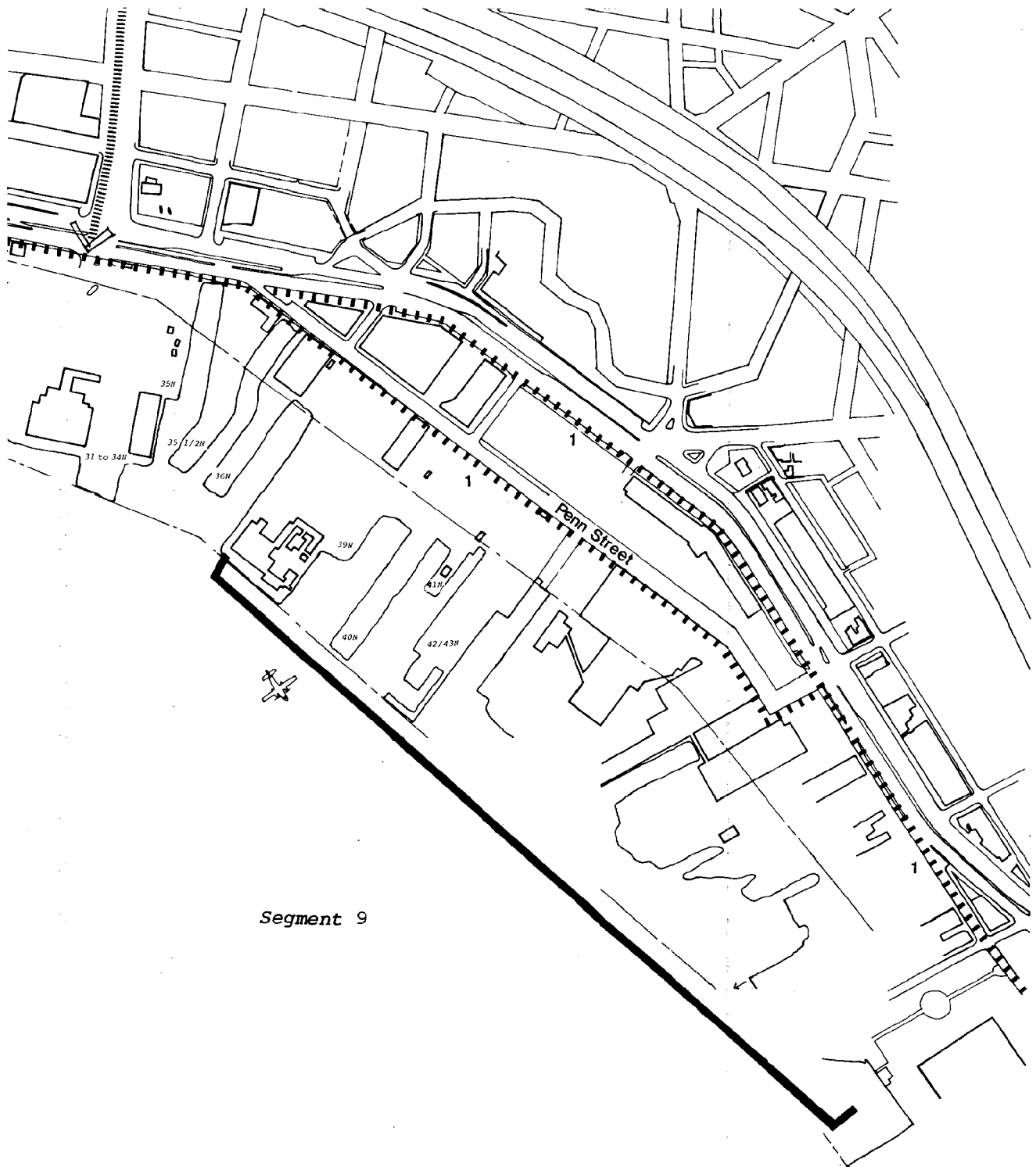
There is an option along Delaware Avenue to institute a Promenade for the interim sidewalk.



Segment 7



Segment 8





---

SEGMENT 9: Fairmount Street to Penn  
Treaty Park

It is recommended that new sidewalks be constructed along both Penn Street and Delaware Avenue to connect to Penn Treaty Park. The sidewalk is an interim solution until land use changes occur adjacent to the route.

An option, in lieu of the interim sidewalk, is the construction of a full Promenade along Delaware Avenue.

---

## CREDITS

### DACP Associates

Philip E. Franks	Principal-in-Charge
Scott W. Killinger	Consulting Principal
William F. Menke	Landscape Architect
Massoud Mohadjeri	Urban Designer
Lucrecia Laudi	Graphics
Naresh Kapadia	Report Production
Victoria Gagliardi	Typist
Joanna Marandola	Typist

### The Philadelphia City Planning Commission

G. Craig Schelter, Executive Director  
David A. Baldinger, Chief Community Planning  
Hadley S. King III, Center City Planner

### Photographs

#### The Philadelphia City Planning Commission:

- o Cover photograph
- o Photograph on page opposite Table of Contents
- o Photographs on pages 4 and 48

### DACP Associates:

- o Figures 7, 14, 18a-d, 20, 21 and 23
- o Page 26

### Illustrations

- o Figure 29, from Center City Philadelphia by the Philadelphia City Planning Commission, 1963, p.39.
- o All other illustrations by DACP Associates unless noted otherwise on the illustration.

This project was financed in part through a Coastal Zone Management Grant from the Pennsylvania Department of Environmental Resources with funds provided by the National Oceanic and Atmospheric Administration.

**Philadelphia**

**RIVERWALK**

